# TD1100

BUSH HOG®

## TRI-DECK FINISHING MOWER

Published 10/14

Part No. 50024754

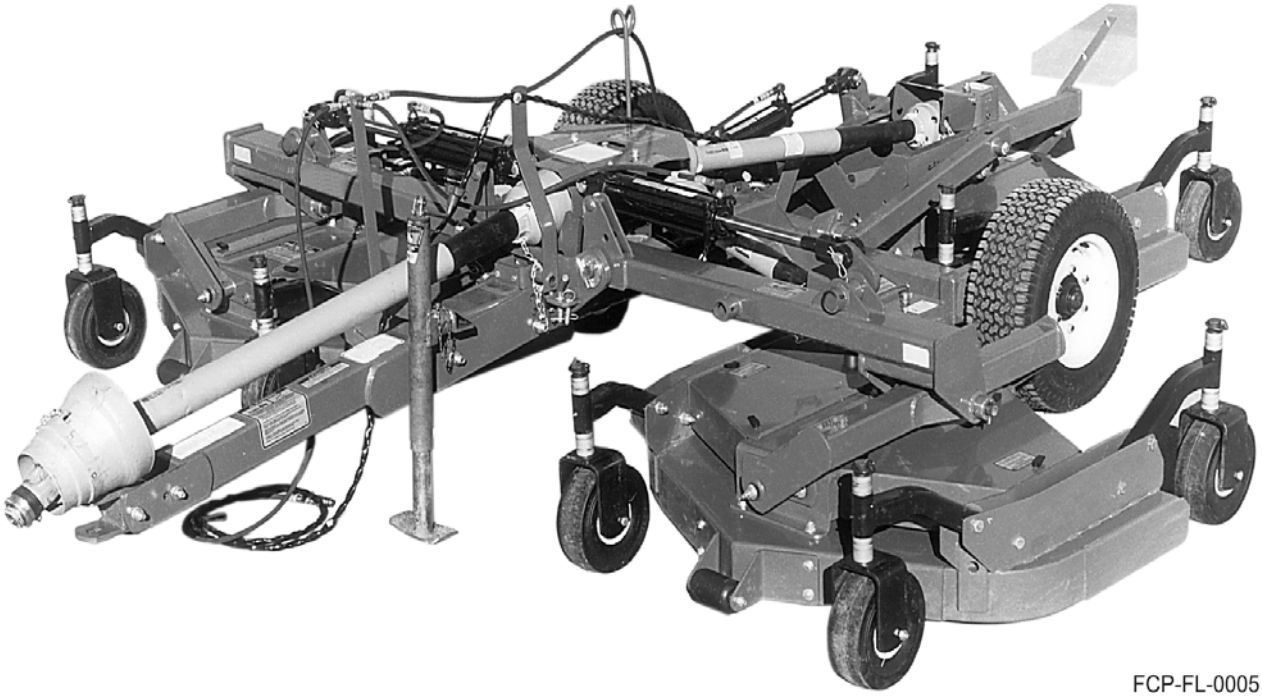
# OPERATOR'S MANUAL

**This Operator's Manual is an integral part of the safe operation of this machine and must be maintained with the unit at all times. READ, UNDERSTAND, and FOLLOW the Safety and Operation Instructions contained in this manual before operating the equipment. *C01-Cover_B***

Safety Video

**Important Operating and Safety Instructions are found in the Mower Safety Video that can be instantly accessed on the internet at: www.algqr.com/bve**

www.algqr.com/bve



FCP-FL-0005

**BUSH HOG®**

2501 Griffin Ave.
Selma, AL 36703
334-874-2700
www.bushhog.com

Bush Hog Web Page

www.algqr.com/bwe

¡ATENCIÓN!
LEA EL INSTRUCTIVO

Si No Lee Ingles, Pida Ayuda a Alguien Que Se Lo Lea Para Que le Traduzca Las Medidas de Seguridad

MEMBER OF THE ALAMO GROUP
ALWAYS ON THE CUTTING EDGE®

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$0.00

## ⚠ PELIGRO

Si no puede leer inglés: antes de poner en funcionamiento este equipo, solicite que alguien le traduzca los mensajes de seguridad o vaya al sitio web para consultar los mensajes de seguridad y las etiquetas ya traducidos.

**El Manual del Operador** **Seguridad vídeo**

www.algqr.com/bis www.algqr.com/bvs

## ⚠ DANGER

Si vous ne savez pas lire le français: avant d'utiliser l'équipement, demandez à une personne de vous traduire les messages de sécurité ou allez sur le site Internet pour voir la traduction des autocollants et des messages de sécurité.

**Manuel de l'Opérateur**

www.algqr.com/bif

## ⚠ PERIGO

Caso você não leia inglês: antes de operar o equipamento, peça para alguém traduzir as mensagens de segurança ou visite a web e obtenha tais mensagens ou os decalques traduzidos.

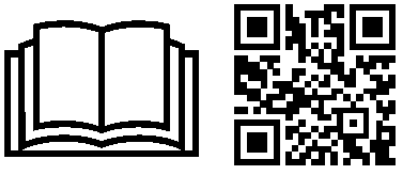
**Manual do Operador**

www.algqr.com/bip

## ⚠ GEFAHR

Falls Sie Deutsch nicht lesen können: Lassen Sie sich, bevor Sie das Gerät in Betrieb nehmen, die Sicherheitshinweise von einer geeigneten Person in Ihre Sprache übersetzen. Oder suchen Sie auf unserer Website nach Übersetzungen von Schilderaufschriften und Sicherheitshinweisen.

**Benutzerhandbuch**



D855 www.algqr.com/big

Safety Video

www.algqr.com/bve

Operator's & Parts Manuals

www.algqr.com/bpm

General Safety

www.algqr.com/bie

Safety Video

# ➢ BE SAFE!

# ➢ BE ALERT!

# ➢ BE ALIVE!

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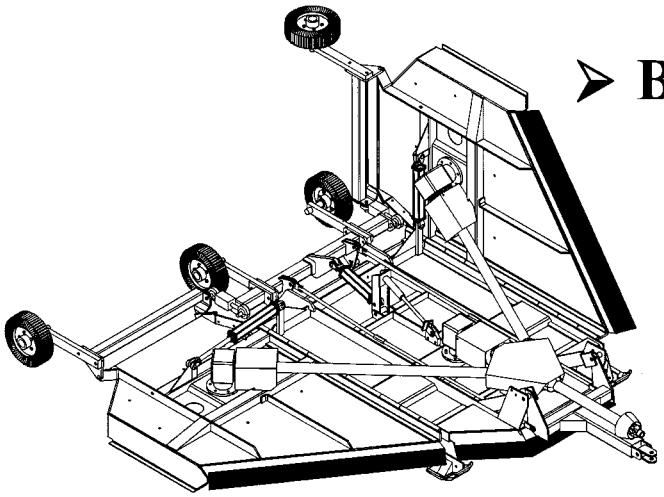


# ➢ BE TRAINED before operating the Mower!

BUSH HOG

## *Safety Training Makes the Difference*

In order to reduce accidents and enhance the safe operation of mowers, *Bush Hog,* in cooperation with other industry manufacturers has developed the AEM/FEMA Industrial and Agricultural Mower Safety Practices video and guide book.

The video will familiarize and instruct mower-tractor operators in safe practices when using industrial and agricultural mowing equipment. It is important that Every Mower Operator be educated in the operation of their mowing equipment and be able to recognize the potential hazards that can occur while operating a mower. This video, along with the mower operator's manual and the warning messages on the mower, will significantly assist in this important education.

Your Authorized *Bush Hog* Dealer may have shown this video and presented you a DVD Video when you purchased your mower. If you or any mower operator have not seen this video, **Watch** the **Video, Read** this **Operator's Manual,** and **Complete** the **Video Guidebook** before operating your new mower. If you do not understand any of the instructions included in the video or operator's manual or if you have any questions concerning safety of operation, contact your supervisor, dealer or *Bush Hog.*

If you would like a VHS video tape of the video, please mail AEMVideo@alamo-group.com or Fax AEM VHS Video at (830) 372-9529 or mail in a completed copy of the form on the back of this page to AEM VHS Video 1502 E Walnut Street, Seguin, TX 78155. and request the VHS video version. Please include your name, mailing address, mower model and serial number.

Every operator should be trained for each piece of equipment (Tractor and Mower), understand the intended use, and the potential hazards before operating the equipment.

The information and material listed above along with this Operator's Manual can assist you in meeting the OSHA requirement for annual operator training.

**OSHA TRAINING REQUIREMENTS**

**The following training requirements have been taken from *Title 29, Code of Federal Regulations Part 1928.57* (a) (6). www.osha.gov**

Operator instructions. At the time of initial assignment and at least annually thereafter the employer shall instruct every employee who operates an agricultural tractor and implements in the safe operating practices and servicing of equipment with which they are or will be involved, and of any other practices dictated by the work environment.

## Bush Hog will provide
## one (1) AEM Mower Safety Practices Video

Please Send Me: ☐ VHS Format – AEM/FEMA Mower Operator Safety Video

☐ DVD Format – AEM/FEMA Mower Operator Safety Video

☐ Mower Operator's Manual

☐ AEM Mower Operator's Safety Manual

Requester Name:_____Phone:_____

Requester Address:_____

City:_____

State:_____

Zip Code:_____

Mower Model:_____Serial Number:_____

Date Purchased:_____Dealer Salesperson:_____

Dealership Name:_____ Dealership Location:_____

Mail to:

AEM Video Services

1502 E. Walnut Street

Seguin, TX 78155

Or Fax to:

(830) 372-9529

Or Email to:

AEMVideo@alamo-group.com

# To the Owner/Operator/Dealer

This Operator's Manual is an integral part of the safe operation of this machine and must be maintained with the implement at all times. A Manual canister is provided on the implement where this manual can be properly stored. If you lose or damage this manual a free replacement manual can be obtained from an authorized Bush Hog dealer or by down loading the manual from the Bush Hog website www.bushhog.com

BEFORE YOU START! READ, UNDERSTAND, and FOLLOW the information provided in this manual, the AEM Mower Safety manual and the tractor operator's manual carefully to learn how to operate and service your machine properly. Failure to do so could result in personal injury to you and bystanders. All implements with moving parts are potentially hazardous. Every effort has been made to ensure that the machine is safe but operators must avoid engaging in unsafe practices and follow the written instructions provided. The manufacturer has designed this implement to be used with all its safety equipment properly attached to minimize the chance of accidents.

SAFETY FIRST. Completely read and understand the safety section of this manual before operating this equipment. Do not allow anyone to operate this equipment who has not fully read and understood this manual. Contact your Dealer to explain any instructions that you do not fully understand.

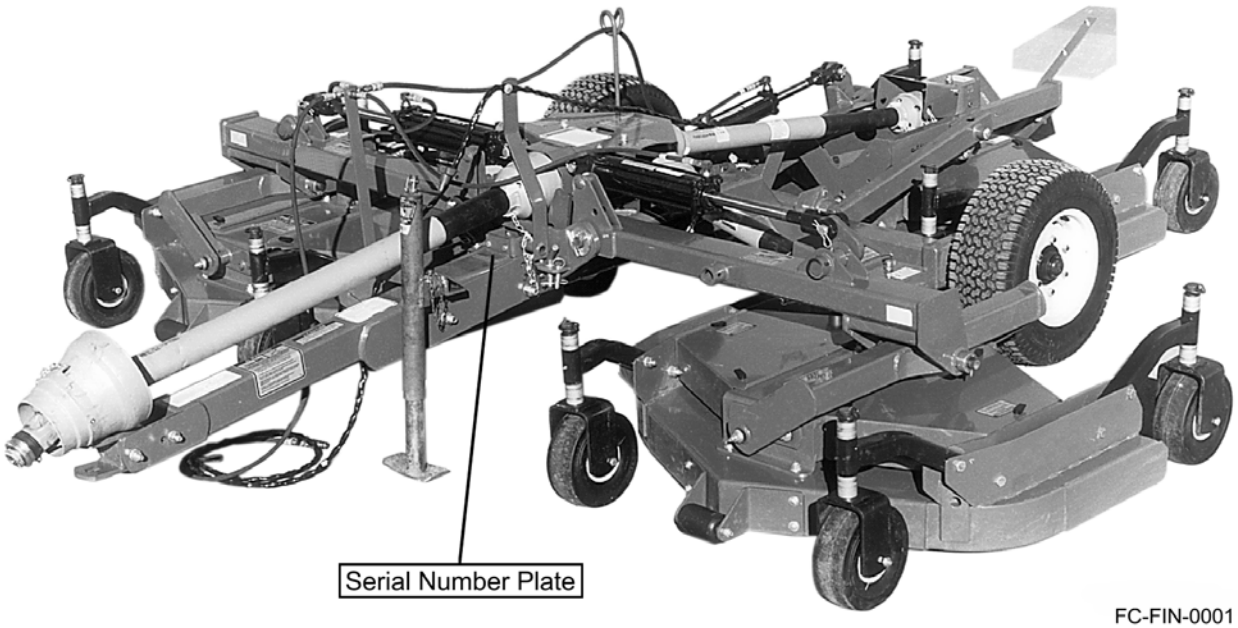
The care you give your Bush Hog Implement will greatly determine your satisfaction with its performance and its service life. Carefully read and follow the instructions in this manual to provide you with a thorough understanding of your new implement and its intended use and service requirements.

All references made in this manual to right, left, front, rear, top or bottom are as viewed facing the direction of forward travel with the implement properly attached to the tractor.

Replacement Parts information is located in a separate Parts Manual. Bush Hog mowers use balanced and matched system components for blade carriers, blades, cuttershafts, knives, knife hangers, rollers, drivetrain components, and bearings. These parts are made and tested to Bush Hog specifications. Non-genuine “will fit” parts do not consistently meet these specifications. The use of “will fit” parts may reduce mower performance, void warranties, and present a safety hazard. Use genuine Bush Hog mower parts for economy and safety.

For future reference, record your Bush Hog product model number and serial number.

| | | | | | |
|---|---|---|---|---|---|
| Dealer | | Telephone | | Model Number | |
| Owner | | Purchase Date: | | Serial Number | |




FC-FIN-0001

# DEALER to CUSTOMER Pre-Delivery/ Operation Instructions

Dealer should inform the Purchaser of this product of Warranty terms, provisions, and procedures that are applicable.Dealer should inform Purchaser to review the contents of the Operator's Manual including safety equipment, safe operation, and maintenance, to review the Safety Signs on the implement (and tractor if possible), and of Purchaser's responsibility to train his/her operator's in safe operation procedures.

- **IMPLEMENTS:** I have explained that Deflectors, Chain Guards, or Solid Skirts must be installed and maintained in good repair.

- **DRIVELINES:** I have made certain that all driveline, gearbox, and other shields are in good repair and fastened securely in place to prevent injuries from entanglement or thrown objects.

- **HYDRAULIC MACHINES:** I have explained the necessity of using clean hydraulic oil, changing filters as instructed, stopping leaks, damage caused by operating with over-heated oil, caring for hoses, using hoses of proper rating, maintaining the specified operating pressure and the potential hazard of oil's penetrating the skin.

- **FOLDING-TYPE IMPLEMENTS:** I have explained that it is not possible to guard against thrown objects when the head is lifted off ground and that operator is responsible to watch out for persons in the area. I have explained that the lifted mower head or boom can contact overhead obstructions with damage to cables and telephone lines and possible injury. I have explained that the extended head or boom or retracted boom can contact power lines with resulting electrocution, injury or death and that operator is responsible for keeping clear of such hazards.

**PRE-DELIVERY SERVICE**
**CHECK AND ADJUST OR LUBRICATE AS REQUIRED**
**See Operator's Manual for Details**
**Inspection Performed - Warranty and Safety Procedures Explained - Installation Complete**

### LUBRICATION & HYDRAULICS

- ☐ Gearbox (Oil Levels)
- ☐ Hydraulic Oil Level (External Tank)
- ☐ Tractor Hydraulic Oil Level
- ☐ Hydraulic Hoses (Not Kinked Tighten Connections)
- ☐ Front Pump Drive (Assembly Is Tight And Shaft Properly Aligned)

### MOWER

- ☐ Spindle And Motor Bolts Properly Torqued
- ☐ Spindle Oil Level
- ☐ Blade Carrier Bolts Properly Torqued/Retaining Pin In Place
- ☐ Mower Cutting Height And Level Adjusted
- ☐ Cutting Shaft Bearings Lubricated
- ☐ All Hardware Properly Torqued
- ☐ Tire and Air Pressure/Lug Nuts (Correct Torque)
- ☐ Wheel Bearings (Check, Grease, and Pre-load)

### ATTACHMENTS & INSTALLATION

- ☐ Deflectors Front And Rear
- ☐ Shredding Attachments
- ☐ Correct Blade Rotation Direction
- ☐ Axle Arms And Beams
- ☐ Tongue And Control Rods (Installed And Adjusted)
- ☐ All Bolts - Pins And Nuts (Proper Torque)

### MOWER TO TRACTOR CONNECTIONS

- ☐ Draw Bar Length (Check And Set)
- ☐ A-Frame Pivot & Links
- ☐ Control Rods (Adjusted Equal)
- ☐ Axle Height (Adjusted)
- ☐ Cutting Height (Adjust)
- ☐ Mount Kit-Pre-Operation Check Complete
- ☐ Mower Wing (Adjust Level With The Center)
- ☐ Mower Wing (Check For Proper Raising Operation)
- ☐ C.V. Driveline (Check Max Turn Radius)
- ☐ Pull Type Hitch (Height Adjustment)
- ☐ Mounting Hardware Properly Torqued

### SAFETY ITEMS

- ☐ Protective Shields (Operation And Installation)
- ☐ Driveline Clutch (Torque Limiter) (Adjust And Run In)
- ☐ Safety Decals (Installed)
- ☐ Operator's Manual (Supplied)
- ☐ Tractor PTO Shield (Installed)
- ☐ S.M.V. Emblem (Installed If Needed)
- ☐ Tongue Jack (Installation and Operation)
- ☐ Safety Tow Chain (Installed)
- ☐ ADMA Driveline Safety Manual Supplied
- ☐ AEM Mower Safety Manual (Supplied in Canister)
- ☐ AEM Mower Safety Video has been shown to Purchaser

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# SAFETY SECTION



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# SAFETY

## GENERAL SAFETY INSTRUCTIONS AND PRACTICES

A careful operator is the best operator. Safety is of primary importance to the manufacturer and should be to the owner/operator. Most accidents can be avoided by being aware of your equipment, your surroundings, and observing certain precautions. The first section of this manual includes a list of Safety Messages that, if followed, will help protect the operator and bystanders from injury or death. Read and understand these Safety Messages before assembling, operating or servicing this Implement. This equipment should only be operated by those persons who have read the manual, who are responsible and trained, and who know how to do so responsibly.

The Safety Alert Symbol combined with a Signal Word, as seen below, is used throughout this manual and on decals which are attached to the equipment. The Safety Alert Symbol means: “ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!” The Symbol and Signal Word are intended to warn the owner/operator of impending hazards and the degree of possible injury faced when operating this equipment.

**Practice all usual and customary safe working precautions and above all--- remember safety is up to <u>YOU</u>. Only <u>YOU</u> can prevent serious injury or death from unsafe practices.**

**⚠ DANGER** Indicates an imminently hazardous situation that, if not avoided, WILL result in DEATH OR VERY SERIOUS INJURY.

**⚠ WARNING** Indicates an imminently hazardous situation that, if not avoided, COULD result in DEATH OR SERIOUS INJURY.

**⚠ CAUTION** Indicates an imminently hazardous situation that, if not avoided, MAY result in MINOR INJURY.

**Important** Identifies special instructions or procedures that, if not strictly observed, could result in damage to, or destruction of the machine, attachments or the environment.

**NOTE**: *Identifies points of particular interest for more efficient and convenient operation or repair.*

READ, UNDERSTAND, and FOLLOW the following Safety Messages. Serious injury or death may occur unless care is taken to follow the warnings and instructions stated in this Manual and in the Safety Messages on the implement. Always follow the instruction in this manual and use good common sense to avoid hazards.

NOTE: *If you want a translation of this safety section in one of the following Languages, please contact: Translations at 1502 E. Walnut Street Seguin, TX 78155; Fax: (830) 372-9529; Safety Section Translations are available in Spanish, Portuguese, French, German, Russian.* ***PN GS01***



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# SAFETY

## OPERATOR SAFETY

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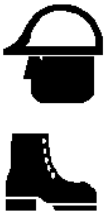
| | |  | | |
| Read and understand Operator's Manual | Always wear Safety Glasses | Wear Hard Hat Safety Shoes | Never use Drugs or Alcohol when operating equipment | Wear Safety Vest when operating on or near roads |

**⚠WARNING** **TO AVOID SERIOUS INJURY OR DEATH DO THE FOLLOWING:**

- **READ, UNDERSTAND** and **FOLLOW** Operator's Manual instructions, Warnings and Safety Messages.
- **WEAR SAFETY GLASSES**, safety shoes, hard hat, hearing protection and gloves when operating or repairing equipment
- **WEAR** appropriate breathing respirator when operating in dusty conditions to avoid respiratory diseases.
- **DO NOT WEAR** loose clothing or jewelry to avoid rotating parts entanglement injury.
- **DO NOT USE DRUGS** or **ALCOHOL** before or while operating equipment.
- **DO NOT ALLOW** anyone to operate equipment under the influence of drug or alcohol.
- **CONSULT** medical professional for medication impairment side effects.
- **STAY ALERT**, prolonged operation can cause fatigue, **STOP** and **REST**.

## GENERAL OPERATING SAFETY

**VISIBILITY CONDITIONS WHEN MOWING:**

- **OPERATE IN DAYLIGHT** or with lights that gives at least 100 yards clear visibility.
- **BE ABLE TO SEE** and identify passersby, steep slopes, ditches, drop-offs, overhead obstructions, power lines, debris and foreign objects.

**GROUND SPEED WHEN MOWING:**

- **NORMAL SPEED** range is between 2 to 5mph.
- **ADJUST MOWING SPEED** for terrain conditions and grass type, density and cut height.
- **REDUCE MOWING SPEED** when near steep slopes, ditches, drop-offs, overhead obstructions, power lines and to avoid debris and foreign objects.

**INSECT INFESTATION**

- Do Not operate in areas where bees or insects may attack unless you **WEAR PROTECTIVE CLOTHING** or use enclosed tractor cab.

**PTO SPEED:**

- **DO NOT EXCEED IMPLEMENT RATED PTO SPEED**
- **AVOID** exceeding rated PTO speeds that may result in broken drivelines or blade failures.

**SAFETY SIGNS:**

- **REPLACE** missing, damaged or unreadable safety signs immediately. ***PN OS01***



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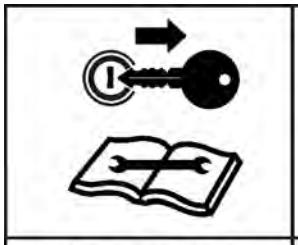
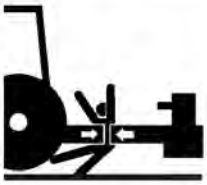
## CONNECTION OR DISCONNECTING IMPLEMENT SAFETY

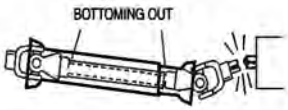


Stop Tractor Remove Key Read Manual



Crushing injury between tractor and implement

Make sure PTO shaft is securely attached to tractor




Make sure PTO shaft are proper length

**⚠ DANGER** **TO AVOID SERIOUS INJURY OR DEATH FROM BEING CRUSHED BY TRACTOR OR IMPLEMENT:**

**WHEN BACKING tractor to implement hitch:**

- **DO NOT ALLOW BYSTANDERS** between tractor and implement

**BEFORE connecting and disconnecting implement hitch:**

- **STOP TRACTOR ENGINE**, place transmission into park, engage parking brake and remove key.

**WHEN connecting and disconnecting implement hitch:**

- **DO NOT** crawl or walk under raised mower or wing.
- **USE** tongue **JACK** to lift heavy implement tongues to control implement tongue movement.
- **AVOID** overloading jack to prevent jack failure and injury.

**WHEN CONNECTING IMPLEMENT DRIVELINE:**

**TO AVOID implement driveline coming loose during operation:**

- **LUBRICATE** yoke spring locking collar to ensure it freely slides on PTO shaft
- **SECURELY** seat yoke locking balls in PTO shaft groove.
- **PUSH** and **PULL DRIVELINE** on both the tractor and implement **PTO SHAFTS** to ensure it is **SECURELY ATTACHED**

**TO AVOID broken driveline during operations:**

- **CHECK** driveline for proper length between PTO shaft and implement gearbox shaft.
- Drivelines too short can pull apart or disengage.
- Drivelines too long can bottom out.
- Bottoming driveline telescoping assembly will stop sliding and become solid.
- Driveline bottoming can push through support bearings and break off PTO shaft.

**CONTACT DEALER if implement driveline does not match Tractor PTO shaft:**

- **DO NOT USE PTO ADAPTER.**
  Using a **PTO** adapter can cause:
- Excessive vibration, thrown objects, blade and implement failures by doubling operating speed.
- Increased working length exposing unshielded driveline areas and entanglement hazards.

**DO NOT connect the Mower to a tractor with the PTO directly connected to the Tractor transmission.** ***PN CD02***



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## CRUSHING HAZARDS

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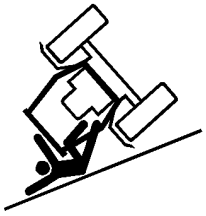
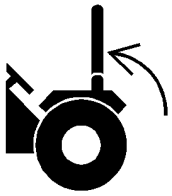
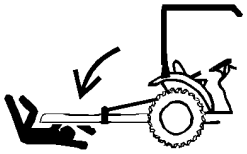
|  |  | |  |
| Crushing injury from roll over | Lock ROPS in up position | Always wear seatbelt | Crushing injury implement falling |

**DANGER** **TO AVOID SERIOUS INJURY OR DEATH FROM FALLING OFF TRACTOR, EQUIPMENT RUN OVER, ROLLOVER AND CRUSHING BY FALLING WING OR IMPLEMENT:**

- **USE ROPS** and **SEAT BELT** equipped tractors for mowing operations.
- **KEEP ROPS** lock in up position.
- **ALWAYS BUCKLE UP** seat belt when operating tractor and equipment.
- **ONLY OPERATE** tractor and equipment while seated in tractor seat.

**WHEN RAISING OR LOWERING IMPLEMENT:**

- Raise or lower **ONLY WHILE SEATED** in tractor seat with seat belt buckled.
- Raise or lower **ONLY** when implement tongue is securely attached to tractor drawbar TO AVOID implement tip over.
- **KEEP BYSTANDERS CLEAR** of area **TO AVOID** crushing.

**LIFTED Equipment can fall from mechanical or hydraulic failure or inadvertent Control Lever movement.**

**WARNING** **TO AVOID EQUIPMENT FALLING while working near or under lifted wings, components and implements raised by 3-Pointed tractor hitch:**

- **SECURELY SUPPORT or block up raised equipment and components.**
- **BLOCK UP and securely support equipment before putting hands, feet or body under raised equipment or lifted components.**

**WHEN PARKING** Implement and Tractor:

- **LOWER** implement, **LOCK** or **BLOCK** lifted parts before leaving equipment.
- **NEVER** leave implement unattended in a raised position.

**WARNING** **TO AVOID CHILDREN FALLING OFF OR BEING CRUSHED BY EQUIPMENT:**

- **NEVER ALLOW** children to play on or around Tractor or Implement.

**WHEN UNHITCHING IMPLEMENT:**

- **LOWER** implement, **LOCK** or **BLOCK** lifted parts before leaving equipment.
- **USE** tongue jack to control implement tongue movement.
- **USE** tongue **JACK** to lift heavy implement tongues.
- **AVOID** overloading jack to prevent jack failure and injury. ***PN CH02***



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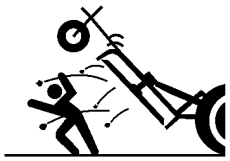
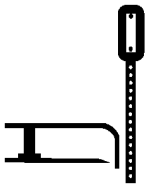
## THROWN OBJECTS HAZARDS

| | | | |
|---|---|---|---|
| |  | |  |
| Mower Thrown Objects Hazard | Raised Mower Thrown Objects | Inspect Area remove foreign objects | Do not let blades contact solid objects |

**⚠ DANGER** **ROTARY MOWERS CAN THROW OBJECTS 300 FEET OR MORE UNDER ADVERSE CONDITIONS.**

**TO AVOID SERIOUS INJURY OR DEATH TO OPERATOR OR BYSTANDERS FROM THROWN OBJECTS:**

- KEEP bystanders 300 feet away

**STOP MOWING IF PASSERSBY ARE WITHIN 300 FEET UNLESS:**

- **All THROWN OBJECT SHIELDING** including, Front and Rear Deflectors, Chains Guards, Steel Guards, Bands, Side Skirts and Skid Shoes in place and in good condition when mowing.
- Mower sections or wing are adjusted to be close and parallel to ground without exposing blades.
- **MOWING AREA** has been inspected and foreign materials and debris have been removed.
- **PASSERSBY** are inside enclosed vehicle.

**INSPECT AREA FOR POTENTIAL THROWN OBJECTS BEFORE MOWING:**

- **REMOVE** debris, rocks, wire, cable, metal objects and other foreign material from area.
  Wire, cable, rope, chains and metal objects can be thrown or swing outside deck with great velocity**:**
  1. **MARK** objects that cannot removed.
  2. **AVOID** these objects when mowing.

**HIGH GRASS** and **WEED AREA INSPECTION**:

- **INSPECT** for and **REMOVE** any hidden large debris.
- **MOW** at Intermediate height
- **INSPECT** and remove remaining debris
- **MOW** at final height.

**MOWER THROWN OBJECT SHIELDING:**

- **KEEP** all thrown object shielding including, Front and Rear Deflectors, Chains Guards, Steel Guards, Bands, Side Skirts and Skid Shoes in place and in good condition when mowing.
- **DO NOT OPERATE** with any thrown object shielding missing, damaged or removed.

**RIGHT OF WAY (Highway) MOWING**

- **USE DOUBLE CHAIN GUARDS** for highway, right-of-way, parks or greenbelt mowing or all other mowing where human dwellings, vehicles, or livestock could be within 300 feet of the mower.
- No shielding is 100% effective in preventing thrown objects. To Reduce Possibility of Injury:
  1. **MAINTAIN MOWER SHIELDING**, side skirts, skid shoes, and blades in good operational condition,
  2. **RAISE CUTTING HEIGHT** to **6 INCHES** minimum,
  3. **INSPECT AREA** thoroughly before mowing to **REMOVE** potential **THROWN OBJECT HAZARDS**,
  4. **NEVER ALLOW BLADES to CONTACT SOLID OBJECTS** like wire, rocks, post, curbs, guardrails, or ground while mowing. ***PN TO02***



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## THROWN OBJECTS HAZARDS (CONTINUED)

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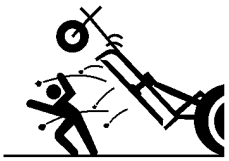
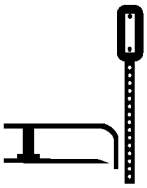
| |  | |  |
| Mower Thrown Objects Hazard | Raised Mower Thrown Objects | Inspect Area remove foreign objects | Do not let blades contact solid objects |

**MOWER OPERATION:**

- **DO NOT** exceed mower's rated Cutting Capacity or cut non-vegetative material.
- **USE ENCLOSED TRACTOR CABS** when two or more mowers are operating in mowing area.
- **ADJUST** mower sections or wing close and parallel to ground without exposing blades
- **ADJUST** cutting **HEIGHT** to **AVOID BLADE CONTACT** with solid objects like wire, rocks, posts, curbs, guard rails and fixed obstructions.
- **DO NOT** operate mower when mower is raised or in transport position
- **STOP MOWING** immediately if blades strike heavy objects, fixed structures, metal guard rails and concrete structures:
  1. **BLADES CAN FAIL** from impact and objects can be thrown with great velocity.
  2. **INSPECT** and **REPLACE** any damaged blades.
  3. **CHECK** blade carrier balance and **REPLACE** if damaged.
- **DO NOT** mow in standing water **TO AVOID** possible **BLADE FAILURE**.
- **AVOID MOWING** in reverse:
  1. **STOP PTO** and back up mower.
  2. **LOWER** mower, engage **PTO** and mow forward.
- **STOP PTO** and **BLADES** when raising implement or the mower to transport position.
- **DO NOT ENGAGE PTO** with mower in transport position.
- **STOP** mowing when **EXCESSIVE VIBRATION** occurs:
  1. **STOP PTO** and tractor **ENGINE.**
  2. **INSPECT** mower for vibration source
  3. **REPLACE** any damage parts and bent or damaged **BLADES**. ***PN TO02-X***



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## RUN OVER HAZARDS

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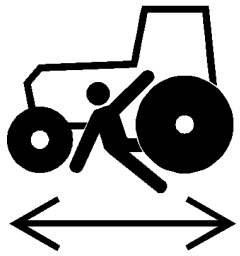
|---|---|---|
|  | | |
| Operator run over hazard | Rider fall off run over hazard | Rider fall off run over hazard |

**⚠ DANGER** **TO AVOID SERIOUS INJURY OR DEATH FROM FALLING OFF TRACTOR OR EQUIPMENT RUN OVER:**

- **USE ROPS** and **SEAT BELT** equipped tractors for mowing operations.
- **KEEP ROPS** locked in **UP** position.
- **ONLY** start tractor while seated in tractor seat.
- **ALWAYS BUCKLE UP** seat belt when operating tractor and equipment.
- **ONLY OPERATE** tractor and equipment while seated in tractor seat.
- **NEVER ALLOW RIDERS** on tractor or implement.

**WHEN MOUNTING AND DISMOUNTING TRACTOR:**

- **ONLY mount or dismount when tractor and moving parts are stopped.**
- **STOP ENGINE AND PTO, engage parking brake, lower implement, allow all moving parts to stop and remove key before dismounting from tractor.** ***PN RO01***



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## PTO ENTANGLEMENT HAZARDS

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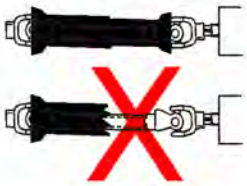
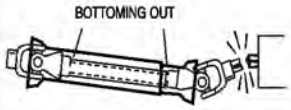
|---|---|---|---|
| | |  |  |
| Entanglement hazard Do Not approach or touch a rotating PTO driveshaft | Make sure PTO shaft is securely attached Do Not Use PTO Adapter | DO NOT Operate if PTO shields are damaged or missing | Make sure PTO shafts are proper length |

**⚠ DANGER** **KEEP AWAY FROM ROTATING DRIVELINES AND ELEMENTS TO AVOID SERIOUS INJURY OR DEATH:**

**STAY AWAY** and **KEEP** hands, feet and body AWAY from rotating blades, drivelines and parts until all moving elements have stopped.

- **STOP, LOOK** and **LISTEN** before approaching the mower to make sure all rotating motion has stopped.
- **ROTATING COMPONENTS CONTINUE** to **ROTATE** after the PTO is shut off.

**PTO SHIELDING:**

**TO AVOID SERIOUS INJURY OR DEATH FROM ENTANGLEMENT WHEN OPERATING IMPLEMENT:**

- **KEEP PTO** shields, integral driveline shields and input shields installed
- **DO NOT OPERATE** mower without shields and guards in place or missing
- **REPAIR OR REPLACE** if damage, broken or missing
- **ALWAYS REPLACE GUARDS** that have been removed for service or maintenance.
- Do Not use PTO or PTO guard as a step.

**TO AVOID** broken driveline during operations:

- **CHECK** driveline for proper length between PTO shaft and implement gearbox shaft.***(Refer to Instructions in Operation Section)***
- Drivelines too short can pull apart or disengage.
- Drivelines too long can bottom out.

  Bottoming driveline telescoping assembly will stop sliding and become solid.
- Driveline bottoming can push through support bearings and break off PTO shaft
- **AVOID** sharp turns or lift mower to heights to cause driveline "knocking".
- Lubricate driveshaft-telescoping components weekly.

**CONTACT DEALER** if implement driveline does not match Tractor PTO shaft:

- **DO NOT USE PTO ADAPTER.**

  Using a PTO adapter can cause excessive vibration, thrown objects, blade and implement failures by doubling operating speed. Increased working length exposing unshielded driveline areas. ***PN PE01***



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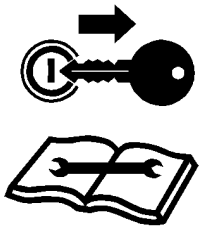
## MOWER BLADE CONTACT HAZARDS

| | | |
|---|---|---|
| | |  |
| Do not put fingers underneath mower | Do not put foot underneath mower | Stop Tractor Remove Key Read Manual |

**⚠ DANGER** **KEEP AWAY FROM ROTATING BLADES TO AVOID SERIOUS INJURY OR DEATH FROM BLADE CONTACT:**

- **STAY AWAY** and **KEEP HANDS, FEET** and **BODY AWAY** from rotating blades, drivelines and parts until all moving elements have stopped.
- **DO NOT** put hands or feet under mower decks
- **STOP** rotating **BLADES** disengage PTO and wait for blade to stop rotating before raising mower deck or wings
- **STOP LOOK** and **LISTEN** before approaching the mower to make sure all rotating motion has stopped. ***PN MB01***



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## HIGH PRESSURE OIL LEAK HAZARDS

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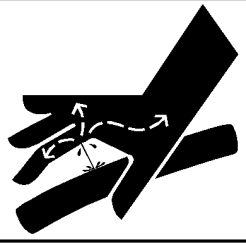
|  | | |
| High pressure oil penetrating skin | High pressure oil eroding skin | Using cardboard to check for oil leaks |

**⚠ DANGER** **TO AVOID SERIOUS INJURY OR DEATH FROM HIGH PRESSURE HYDRAULIC OIL LEAKS PENERATING SKIN:**

- **DO NOT OPERATE** equipment with oil or fuel leaks.
- **KEEP** all hydraulic hoses, lines and connections in **GOOD CONDITION** and **TIGHT** before applying system pressure.
- **RELIEVE HYDRAULIC PRESSURE** before disconnecting lines or working on the system.
- **REMOVE** and replace hose if you suspect it leaks. Have dealer test it for leaks.

**HIGH PRESSURE FLUID LEAKS CAN BE INVISIBLE.**

**WHEN CHECKING FOR HYDRAULIC LEAKS AND WORKING AROUND HYDRAULIC SYSTEMS:**

- **ALWAYS WEAR** safety glasses and impenetrable gloves.
- **USE** paper or cardboard to search for leaks.
- **DO NOT USE** hands or body parts to search for leak.
- **KEEP** hands and body **AWAY** from pin holes and nozzles ejecting hydraulic fluid.
- Hydraulic fluid may cause gangrene if not surgically removed immediately by a doctor familiar with this form of injury.

***PN HP01***



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# SAFETY

## ELECTRICAL & FIRE HAZARDS

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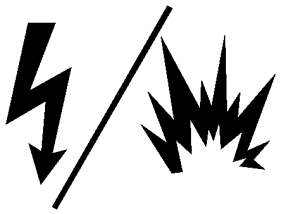
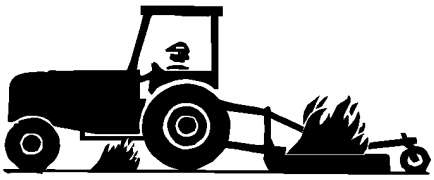
|---|---|
|  |  |
| Strike and explosion Hazard<br>Blades Contacting Utility or<br>Gas Lines | Do not operate near fires.<br>Keep mower deck clear of<br>debris |

**⚠ DANGER** **TO AVOID SERIOUS INJURY OR DEATH FROM ELECTRICAL CONTACT WHEN WORKING AROUND ELECTRICAL POWER LINES, GAS LINES AND UTILITY LINES:**

- **INSPECT** mowing area for overhead or underground electrical power lines, obstructions, gas lines, cables and Utility, Municipal, or other type structure.
- **DO NOT** allow mower to contact with any Utility, Municipal, or type of structures and obstructions.
- **CALL 811** and 1-800-258-0808 for identify buried utility lines.

**FIRE PREVENTION GUIDELINES while Operating, Servicing, and Repairing Mower and Tractor to reduce equipment and grass fire Risk:**

- **EQUIP** Tractor with a **FIRE EXTINGUISHER**
- **DO NOT OPERATE** mower on a tractor equipped with under frame exhaust
- **DO NOT SMOKE** or have open flame near Mower or Tractor
- **DO NOT DRIVE** into burning debris or freshly burnt area
- **AVOID FIRE IGNITION** by not allowing mower blade to contact solid objects like metal or rock.
- **ADJUST SLIP CLUTCHES** to avoid excessive slippage and clutch plate heating.
- **CLEAR** any grass clippings or debris buildup around mower drivelines, slip clutches, and gearboxes.
- **SHUT OFF ENGINE** while refueling. ***PN EF02***



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## TRANSPORTING HAZARDS

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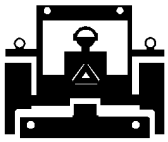
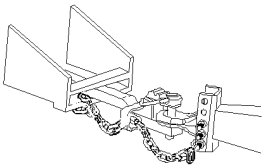
|  | | |  | |
| Use SMV signs and Flashing Lights | Loss of Control Stopping Hazard | Loss of Control Speeding Hazard | Use Safety Tow Chain - Tractor to Implement | Engage Transport Locks |

**⚠WARNING** **TO AVOID SERIOUS INJURY AND DEATH WHEN TOWING OR TRANSPORTING EQUIPMENT:**

- **KEEP** transport speed **BELOW** 20 mph to maintain control of equipment.
- **REDUCE SPEED** on inclines, on turns and in poor towing conditions.
- **DO NOT TOW** with trucks or other vehicles
- **USE** only properly sized and equipped tractor for towing equipment.
- **FOLLOW** all local traffic regulations.

**TRACTOR REQUIREMENTS FOR TOWING OR TRANSPORTING IMPLEMENTS:**

- **ONLY TRANSPORT** with tractor with **ROPS** in the raised position.
- **USE** properly sized and equipped tractor that exceeds implement weight by at least 20%
- **KEEP** 20% of tractor weight on front wheels to maintain safe steering.

**BEFORE TRANSPORTING OR TOWING IMPLEMENT:**

**TRACTOR INSPECTION:**

- **CHECK** steering and braking for proper operation and in good condition.
- **CHECK SMV** sign, reflectors and warning lights for proper operation and visibility behind unit.
- **CHECK** that your driving vision is not impaired by tractor, cab, or implement while seated in tractor seat.
- **ADJUST** your operating position, mirrors, and implement transport for clear vision for traveling and traffic conditions.

**PREPARE IMPLEMENT FOR TRANSPORTING OR TOWING:**

- **DISENGAGE PTO**
- **RAISE MOWER**
- **REMOVE** any cut material collected on mower deck.

**TOWED MOWERS - ENGAGE TRANSPORT LOCKS AND SAFETY CHAINS:**

- **INSTALL** center axle cylinder transport stops or pins
- ATTACH implement SAFETY CHAIN to tractor

**DETERMINE STOPPING CHARACTERISTICS OF TRACTOR AND IMPLEMENT FOR TRANSPORTING OR TOWING:**

**BRAKING TESTS:**

- **APPLY** brakes at increasing speeds
- Observe **STOPPING** distances increases with increased speeds.
- **DETERMINE** the maximum safe transport speed that does not exceed 20 mph

**DETERMINE MAXIMUM TURNING SPEED BEFORE OPERATING ON ROADS OR UNEVEN GROUND:**

- **TEST** equipment in slowly increasing speed in turns to determine it can be operated at higher speeds.
- **USE REDUCED** turning speeds in sharp turns to avoid equipment turning over.

**WHEN TOWING OR TRANSPORTING EQUIPMENT:**

- Always **WEAR SEAT BELT** when operating or transporting mower.
- **USE** low speeds to avoid overturn with raised wings.
- **USE** low speeds and gradual steering on curves, hills, rough or uneven surfaces and on wet roads
- **TURN ON** tractor **FLASHING WARNING LIGHTS**.
- **ALLOW** clearance for implement swing while turning. ***PN TH02***



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# SAFETY

## HAZARDS WITH MAINTENANCE OF IMPLEMENT

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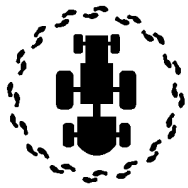
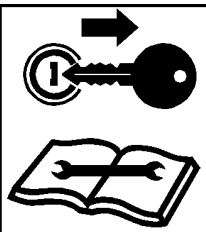
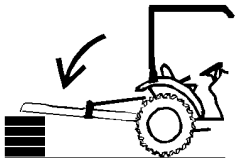
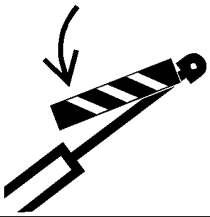
|---|---|---|---|---|
|  |  |  |  | |
| Periodically inspect all moving parts, lubricate drivelines, and tighten all fasteners | Stop engine remove key before conducting maintenance | Block up implement before servicing Use large blocks on soft or wet soil | Engage cylinder transport locks | Inspect Blades for damage or cracks |

**⚠WARNING** **AVOID SERIOUS INJURY OR DEATH FROM COMPONENT FAILURE BY KEEPING IMPLEMENT IN GOOD OPERATING CONDITION IN PERFORMING PROPER SERVICE, REPAIRS AND MAINTENANCE.**

**BEFORE PERFORMING SERVICE, REPAIRS AND MAINTENANCE ON THE IMPLEMENT:**

**SECURE EQUIPMENT FOR SERVICE**

**BLOCK OUT POTENTIAL ENERGY HAZARDS; Rotating Parts, Raised Components, Hydraulic Pressure.**

- **STOP ENGINE**, engage parking brake and allow all moving parts to stop and remove key before dismounting from truck seat.
- **PLACE** implement on ground or securely block up raised equipment. Use large blocks on soft or wet soil.
- **PUSH** and **PULL** Remote Hydraulic Cylinder lever to relieve hydraulic pressure.
- **DISCONNECT IMPLEMENT** Hydraulic **HOSES** from truck.

**WEAR SAFETY GLASSES, PROTECTIVE GLOVES** and follow **SAFETY PROCEDURES** when performing service, repairs and maintenance on the implement:

- Always **WEAR** protective **GLOVES** when handling chemicals or worn component with sharp edges.
- Always **WEAR GLOVES** and **SAFETY GLASSES** when servicing components
- **AVOID CONTACT** with hot hydraulic oil tanks, pumps, motors, valves and hose connection surfaces.
- **SECURELY** support or **BLOCK UP** raised implement, framework and lifted components before working underneath equipment.
- **STOP** any implement movements and **SHUT-OFF TRACTOR** engine before doing any work procedures.
- **USE** ladder or raised stands to reach high equipment areas inaccess ble from ground.
- **ENSURE** good footing by standing on solid flat surfaces when getting on implement to perform work.
- **FOLLOW** manufacturer's instructions in handling oils, solvents, cleansers, and other chemical agents.
- **DO NOT** change any factory-set hydraulic calibrations to avoid component or equipment failures.
- **DO NOT** modify or alter implement, functions or components.
- **DO NOT WELD** or repair rotating mower components. These may cause vibrations and component failures being thrown from mower.

**PERFORM SERVICE, REPAIRS, LUBRICATION AND MAINTENANCE OUTLINED IN IMPLEMENT MAINTENANCE SECTION:**

- **INSPECT** for loose fasteners, worn or broken parts, leaky or loose fittings, missing or broken cotter keys and washers on pins, and all moving parts for wear.
- **REPLACE** any worn or broken parts with authorized service parts.
- **LUBRICATE** unit as specified by lubrication schedule
- **NEVER** lubricate, adjust or remove material while it is running or in motion.
- **TORQUE** all bolts and nuts as specified.

**BLADE INSPECTION:**

- **REPLACE** bent, damage, cracked or broken blades immediately with new blades.
- **AVOID** blade failures and thrown broken blades. **DO NOT** straighten, weld, or weld hard-facing blades.

**SAFETY SHIELDS, GUARDS AND SAFETY DEVICES INSPECTION:**

- **KEEP** all Deflectors, Chain Guards, Steel Guards, Gearbox Shields, and PTO integral shields, Bands, Side Skirts and Skid Shoes in place and in good condition.
- **REPLACE** any missing, broken or worn safety shields, guards and safety devices.
- Engine Exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.
- Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the state of California to cause cancer, birth defects or other reproductive harm. ***PN HM01***



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## PARTS INFORMATION

PARTS INFORMATION

Bush Hog mowers use balanced and matched system components for blade carriers, blades, cuttershafts, knives, knife hangers, rollers, drivetrain components, and bearings. These parts are made and tested to Bush Hog specifications. Non-genuine "will fit" parts do not consistently meet these specifications. The use of “will fit” parts may reduce mower performance, void warranties, and present a safety hazard. Use genuine Bush Hog mower parts for economy and safety. (SPBH-1)

**SEE YOUR BUSH HOG DEALER**

Operator’s & Parts Manuals

www.algqr.com/bpm





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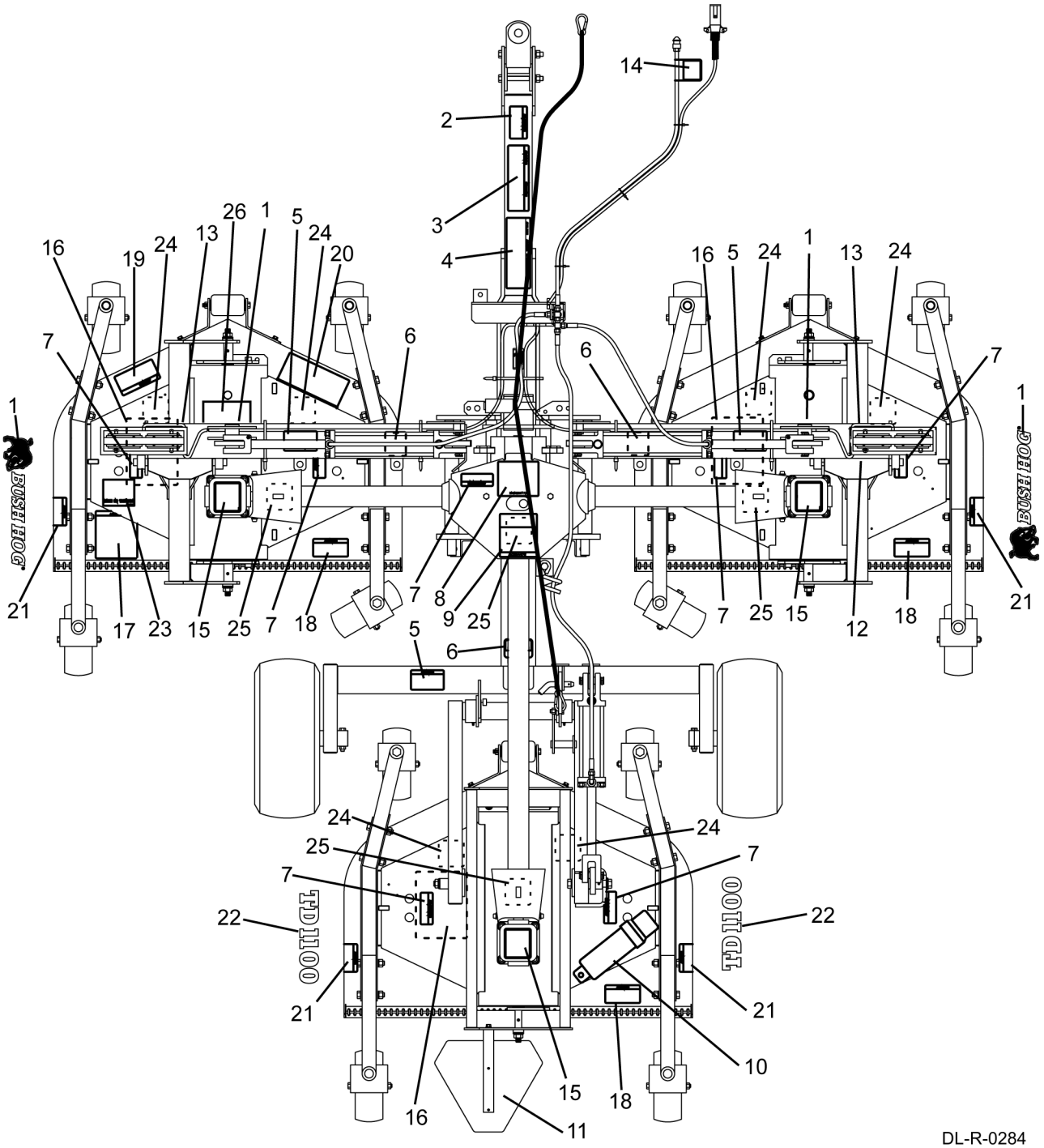
# SAFETY

## Decal Location

***NOTE:*** *Bush Hog supplies safety decals on this product to promote safe operation. Damage to the decals may occur while in shipping, use, or reconditioning. Bush Hog cares about the safety of its customers, operators, and bystanders, and will replace the safety decals on this product in the field, free of charge (Some shipping and handling charges may apply). Contact your Bush Hog dealer to order replacement decals.*



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| ITEM | PART NO. | QTY. | TYPE | DESCRIPTION |
|---|---|---|---|---|
| 1. | 50058089 | 2 | LOGO | Bush Hog Name |
| 2. | D754 | 1 | WARNING | Entanglement Hazard |
| 3. | D559 | 1 | WARNING | Use Genuine Bush Hog Parts |
| 4. | D855 | 1 | DANGER | Multi-Language General Safety |
| 5. | D628 | 3 | DANGER | Crushing Hazard & Pinch Points |
| 6. | D857 | 3 | DANGER | Crushing Hazard |
| 7. | D641 | 7 | WARNING | Pinch Point Hazard |
| 8. | D617 | 1 | CAUTION | Hydraulic System |
| 9. | D547 | 1 | DANGER | Driveline Hazard |
| 10. | 50035829 | 1 | ---------- | Canister, Operator's Manual Inside |
| | 50034754 | 1 | ---------- | Operator's Manual |
| 11. | 94359 | 1 | REFLECT | SMV |
| 12. | 53316BH | 4 | REFLECT | Red Reflector |
| 13. | 50031212 | 2 | REFLECT | Amber Reflector |
| 14. | 94878 | 1 | INSTRUCT | Safety Tag |
| 15. | 50057096 | 3 | INSTRUCT | 5 Yr. Gearbox Warranty |
| 16. | 99941 | 3 | INSTRUCT | Belt Installation (Underside of Shield) |
| 17. | D850 | 1 | DANGER | Multi Hazard |
| 18. | D614 | 3 | DANGER | Thrown Object Hazard |
| 19. | D852 | 1 | WARNING | Crushing Hazard |
| 20. | D851 | 1 | DANGER | Run Over Hazard |
| 21. | D418 | 1 | DANGER | Keep Away - Blade Contact |
| 22. | 99945 | 4 | LOGO | TD1100 Model Decal |
| 23. | 50074259 | 1 | LOGO | Made in the USA |
| 24. | D646 | 6 | DANGER | Guard Missing - Do Not Operate |
| 25. | D546 | 4 | DANGER | Guard Missing - Entanglement |
| 26. | D860 | 1 | WARNING | Multi Hazard |



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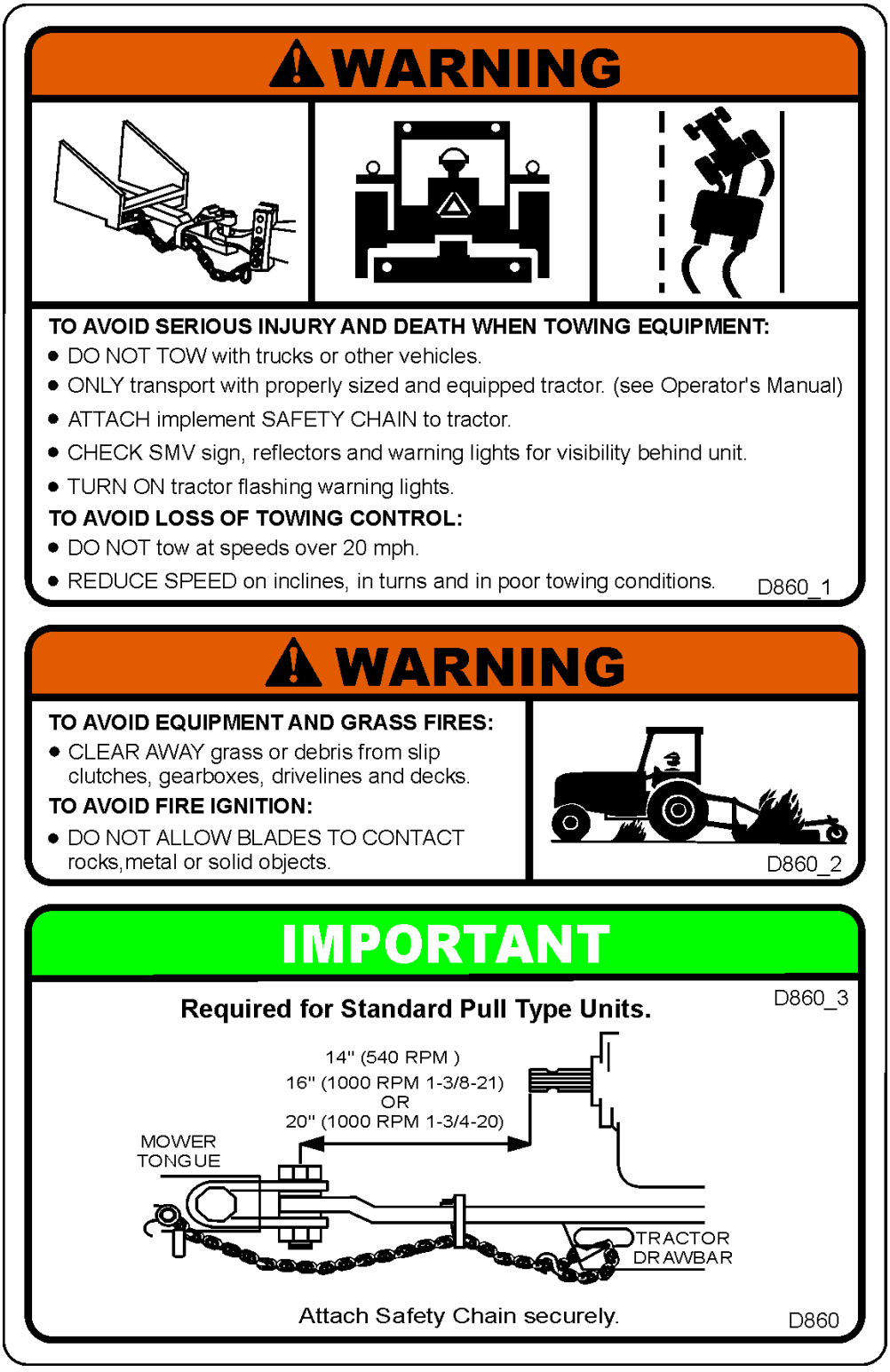
## Decal Description


WARNING
TO AVOID SERIOUS INJURY AND DEATH WHEN TOWING EQUIPMENT:
• DO NOT TOW with trucks or other vehicles.
• ONLY transport with properly sized and equipped tractor. (see Operator's Manual)
• ATTACH implement SAFETY CHAIN to tractor.
• CHECK SMV sign, reflectors and warning lights for visibility behind unit.
• TURN ON tractor flashing warning lights.
TO AVOID LOSS OF TOWING CONTROL:
• DO NOT tow at speeds over 20 mph.
• REDUCE SPEED on inclines, in turns and in poor towing conditions.
D860_1
WARNING
TO AVOID EQUIPMENT AND GRASS FIRES:
• CLEAR AWAY grass or debris from slip clutches, gearboxes, drivelines and decks.
TO AVOID FIRE IGNITION:
• DO NOT ALLOW BLADES TO CONTACT rocks,metal or solid objects.
D860_2
IMPORTANT
D860_3
Required for Standard Pull Type Units.
14" (540 RPM )
16" (1000 RPM 1-3/8-21)
OR
20" (1000 RPM 1-3/4-20)
MOWER TONGUE
TRACTOR DRAWBAR
Attach Safety Chain securely.
D860



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**WARNING**

**ENTANGLEMENT HAZARD**

**TO AVOID SERIOUS INJURY OR DEATH FROM LATCH ROPE ENTANGLEMENT WITH DRIVELINES OR WHEELS:**

- DO NOT wrap latch release rope around hand, fingers or any body parts.
- DO NOT allow latch release rope to hang loose.

D754

**WARNING**

**Non-genuine parts can fail catastrophically.**
**TO AVOID SERIOUS INJURY OR DEATH:**

- ONLY use genuine Bush Hog replacement parts.
- Non-genuine parts can fail creating hazardous conditions for operator and bystanders.

Contact local dealer or Bush Hog about repair parts at:

2501 Griffin Ave.,Selma, Al 36701
Customer Service: 800-363-6096.
Email: contactus@bushhog.com

www.algqr.com/bpm

D559_1

**IMPORTANT**

**BE AWARE**
**BE ALERT**
**BE ALIVE**

**BE TRAINED**
**Before Operating this Mower**

www.algqr.com/bve

To prevent serious injury to yourself and/or bystanders, be trained in Safe Mowing Practices. Alamo Group Companies as well as AEM and FEMA provide training material that is critical for your Safety and the Safety of others when operating this equipment. Make these Safety Procedures an important part of every workday. Read and understand the Operator's Manual. Do not let untrained individuals operate this equipment. Contact your Dealer, AEM (www.aem.org), FEMA (314-878-2304, www.FarmEquip.org), or Alamo Group (www.Alamo-Group.com) for information on training material or courses that provide training in Safer Operating Practices for Mowers. D559_2

D559



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## ⚠ PELIGRO

Si no puede leer inglés: antes de poner en funcionamiento este equipo, solicite que alguien le traduzca los mensajes de seguridad o vaya al sitio web para consultar los mensajes de seguridad y las etiquetas ya traducidos.

**El Manual del Operador** **Seguridad vídeo**

www.algqr.com/bis www.algqr.com/bvs

## ⚠ DANGER

Si vous ne savez pas lire le français: avant d'utiliser l'équipement, demandez à une personne de vous traduire les messages de sécurité ou allez sur le site Internet pour voir la traduction des autocollants et des messages de sécurité.

**Manuel de l'Opérateur**

www.algqr.com/bif

## ⚠ PERIGO

Caso você não leia inglês: antes de operar o equipamento, peça para alguém traduzir as mensagens de segurança ou visite a web e obtenha tais mensagens ou os decalques traduzidos.

**Manual do Operador**

www.algqr.com/bip

## ⚠ GEFAHR

Falls Sie Deutsch nicht lesen können: Lassen Sie sich, bevor Sie das Gerät in Betrieb nehmen, die Sicherheitshinweise von einer geeigneten Person in Ihre Sprache übersetzen. Oder suchen Sie auf unserer Website nach Übersetzungen von Schilderaufschriften und Sicherheitshinweisen.

**Benutzerhandbuch**

D855 www.algqr.com/big

## ⚠ WARNING

**PINCH POINT HAZARD**

**TO AVOID SERIOUS INJURY:**

- DO NOT OPERATE with Belt Shield removed.

D641

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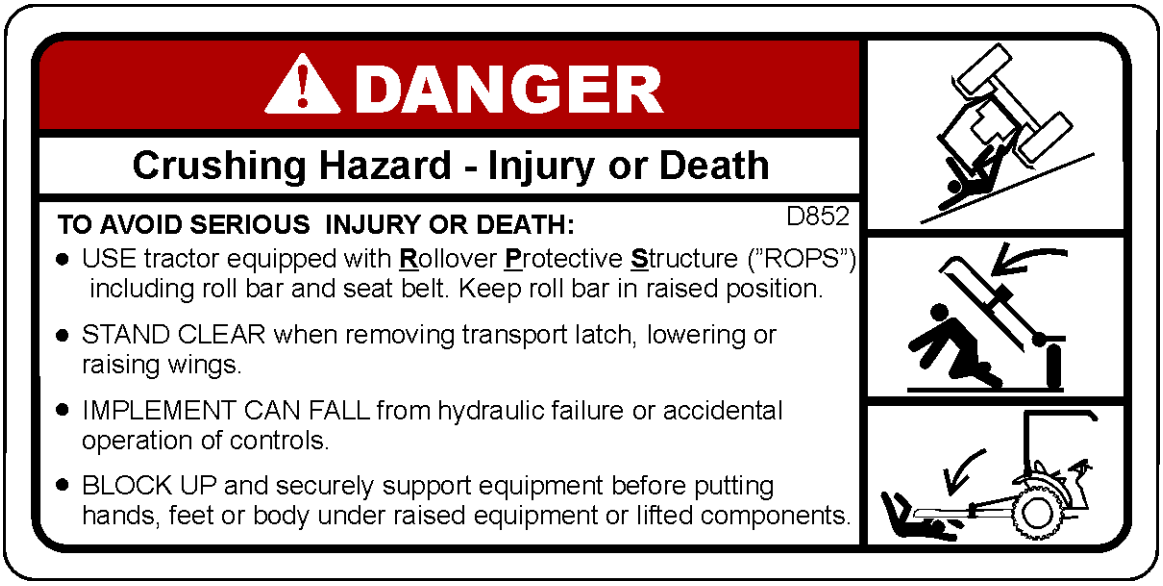
DANGER
Crushing Hazard - Injury or Death
TO AVOID SERIOUS INJURY OR DEATH:
D852
• USE tractor equipped with Rollover Protective Structure ("ROPS") including roll bar and seat belt. Keep roll bar in raised position.
• STAND CLEAR when removing transport latch, lowering or raising wings.
• IMPLEMENT CAN FALL from hydraulic failure or accidental operation of controls.
• BLOCK UP and securely support equipment before putting hands, feet or body under raised equipment or lifted components.

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WARNING
TO AVOID SERIOUS INJURY OR DEATH FROM HIGH PRESSURE HYDRAULIC OIL LEAKS PENETRATING SKIN:
• DO NOT OPERATE equipment with oil or fuel leaks.
• KEEP all hydraulic hoses, lines and connections in good condition and tight before applying system pressure.
• Relieve hydraulic pressure before disconnecting lines or working on the system.
• REMOVE and replace hose if you suspect it leaks. Have dealer test it for leaks.
HIGH PRESSURE FLUID LEAKS CAN BE INVISIBLE. WHEN CHECKING FOR HYDRAULIC LEAKS AND WORKING AROUND HYDRAULIC SYSTEMS:
• DO NOT use hands to check for leaks.
• ALWAYS WEAR safety glasses and impenetrable gloves.
• USE paper or cardboard to search for leaks.
• KEEP hands and body AWAY from pin holes and nozzles ejecting hydraulic fluid.
• Hydraulic fluid may cause gangrene if not surgically removed immediately by a doctor familiar with this form of injury.
D617

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DANGER
Run Over Hazard - Injury or Death
TO AVOID SERIOUS INJURY OR DEATH:
• ALWAYS BUCKLE UP seat belt.
• ONLY START Tractor while seated in the operator's seat.
• STOP ENGINE and PTO, engage parking brake, lower implement, allow all moving parts to stop and remove key before dismounting from tractor.
• KNOW HOW to stop tractor and equipment quickly for an emergency
• DO NOT MOUNT or DISMOUNT Tractor in motion.
• NEVER ALLOW riders on tractor or implement.
• NEVER ALLOW children to operate or ride on tractor or implement.
• KEEP BYSTANDERS CLEAR of area before moving tractor or implement.
• KEEP ALERT and AVOID hitting stumps, holes, ruts, and uneven terrain.
• AVOID tree limbs, brush and other overhanging objects that can strike and throw the operator from seat.
D851_1
DANGER
TRASH
D851_2
THROWN OBJECTS HAZARD
D851
Mower can throw objects up to 300 feet. TO AVOID SERIOUS INJURY OR DEATH to operator or bystanders:
• STOP mowing if bystanders or traffic come within 300 feet.
• DO NOT OPERATE with thrown object shielding removed.
• KEEP thrown object shielding in place and in good condition during operation. Thrown Objects shielding is subject to wear.
• REPAIR OR REPLACE shielding if damaged, broken or missing. See Operator's Manual for all Shields and Guards.
• INSPECT area for potential mower thrown object hazards before mowing.
• Remove and AVOID objects such as wire, cable, metal objects and all other foreign material.
• DO NOT ALLOW blades to contact solid objects like wire, rocks, posts, curbs or guard rails.
• DO NOT OPERATE in transport position or with wings off ground.

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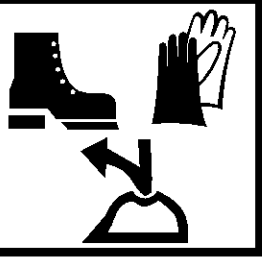
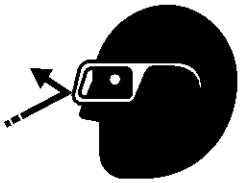
## ⚠ DANGER





**TO AVOID SERIOUS INJURY OR DEATH:** D850_1

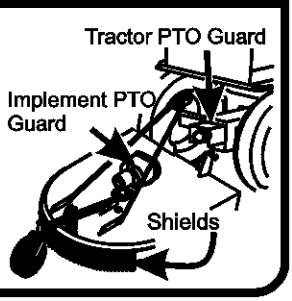
- READ AND UNDERSTAND the provided Operator's Manuals, safety signs and information decals for tractor and implement before operating equipment.
- CONTACT DEALER immediately if you do not have manuals.
- CONTACT DEALER to explain any instructions not fully understood.
- ALWAYS WEAR safety glasses.
- WEAR hard hat, safety shoes and gloves for protection when operating equipment.

## ⚠ DANGER

### ENTANGLEMENT HAZARD

**TO AVOID SERIOUS INJURY OR DEATH:** D850_2

- DO NOT operate without guards in place and in good condition. PTO and gearbox guarding are SUBJECT TO WEAR.
- STAY AWAY and KEEP hands, feet and body AWAY from rotating blades, drivelines and parts that continue to move after power shut-off. WAIT until all moving elements have stopped.
- ALWAYS REPLACE GUARDS that have been removed for service or maintenance.
- STOP, LOOK and LISTEN for rotating motion before approaching implement.
- DO NOT STEP ON drivelines or guards. D850



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DANGER
Crushing Hazard
Transport Latch
D857
RAISE AND SECURELY LOCK Wing Transport Latch before transporting mower on roadways or working under wing.

DANGER
CRUSHING HAZARD AND PINCH POINTS
TO AVOID SERIOUS INJURY OR DEATH:
• KEEP AWAY from moving machinery parts that can pinch, crush or fall.
D628



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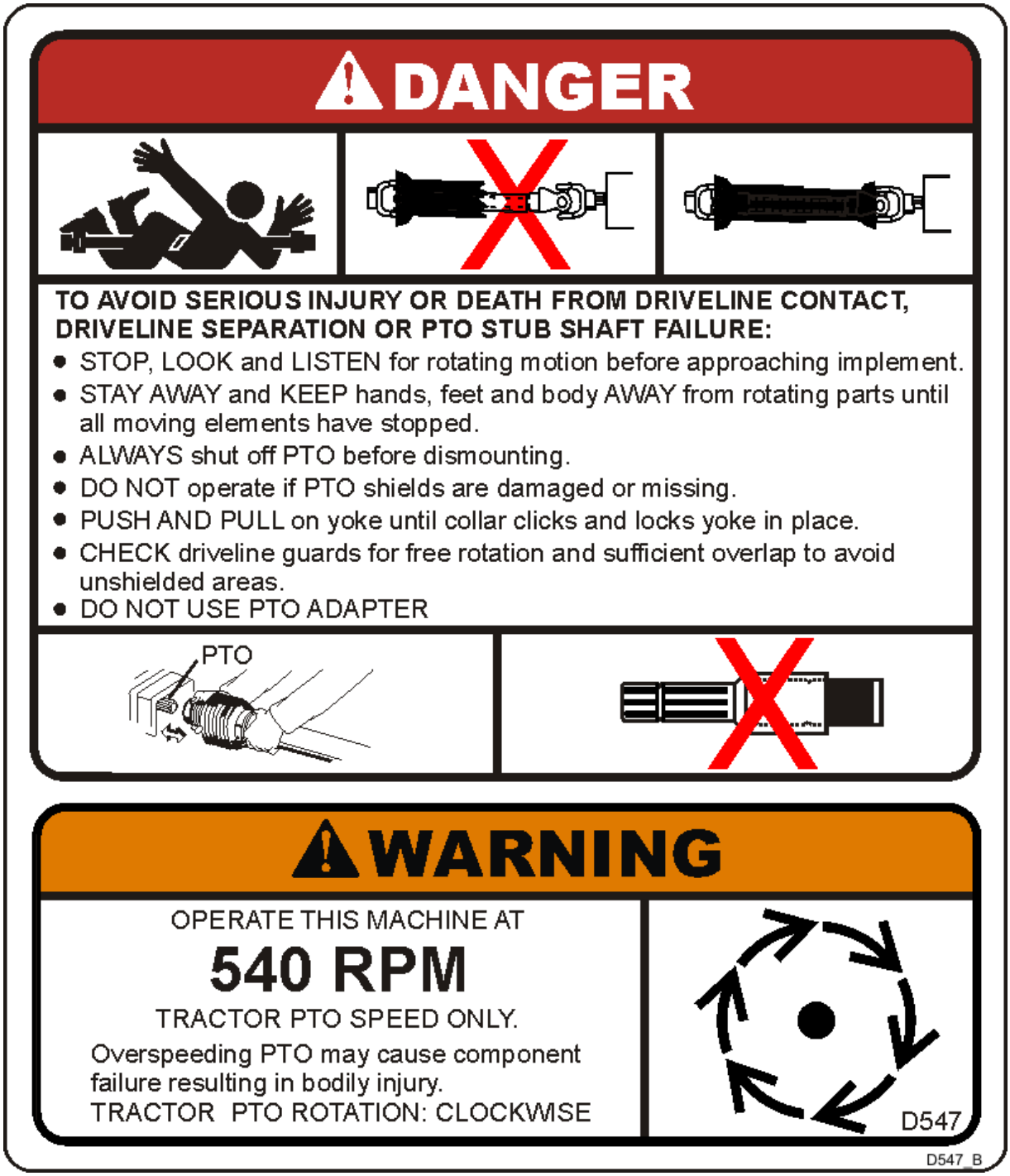
DANGER
TO AVOID SERIOUS INJURY OR DEATH FROM DRIVELINE CONTACT, DRIVELINE SEPARATION OR PTO STUB SHAFT FAILURE:
• STOP, LOOK and LISTEN for rotating motion before approaching implement.
• STAY AWAY and KEEP hands, feet and body AWAY from rotating parts until all moving elements have stopped.
• ALWAYS shut off PTO before dismounting.
• DO NOT operate if PTO shields are damaged or missing.
• PUSH AND PULL on yoke until collar clicks and locks yoke in place.
• CHECK driveline guards for free rotation and sufficient overlap to avoid unshielded areas.
• DO NOT USE PTO ADAPTER
PTO
WARNING
OPERATE THIS MACHINE AT
540 RPM
TRACTOR PTO SPEED ONLY.
Overspeeding PTO may cause component failure resulting in bodily injury.
TRACTOR PTO ROTATION: CLOCKWISE
D547
D547_B



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## Federal Laws and Regulations

This section is intended to explain in broad terms the concept and effect of federal laws and regulations concerning employer and employee equipment operators. This section is not intended as a legal interpretation of the law and should not be considered as such.

**Employer-Employee Operator Regulations**

U.S. Public Law 91-596 (The Williams-Steiger Occupational and Health Act of 1970) OSHA

**This Act Seeks:**

"...to assure so far as possible every working man and woman in the nation safe and healthful working conditions and to preserve our human resources..."

**DUTIES**

Sec. 5 (a) Each employer-

(1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;

(2) shall comply with occupational safety and health standards promulgated under this Act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations and orders issued pursuant to this Act which are applicable to his own actions and conduct.

**OSHA Training Requirements**

***Title 29, Code of Federal Regulations Part 1928.57(a)(6).*** **www.osha.gov**

Operator instructions. At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee who operates an agricultural tractor and implements in the safe operating practices and servicing of equipment with which they are or will be involved, and of any other practices dictated by the work environment.

Keep all guards in place when the machine is in operation;

Permit no riders on equipment

Stop engine, disconnect the power source, and wait for all machine movement to stop before servicing, adjusting, cleaning or unclogging the equipment, except where the machine must be running to be properly serviced or maintained, in which case the employer shall instruct employees as to all steps and procedures which are necessary to safely service or maintain the equipment.

Make sure everyone is clear of machinery before starting the engine, engaging power, or operating the machine.

**Employer Responsibilities:**

To ensure employee safety during Tractor and Implement operation, it is the employer's responsibility to:

1. Train the employee in the proper and safe operation of the Tractor and Implement.
2. Require that the employee read and fully understand the Tractor and Implement Operator's manual.
3. Permit only qualified and properly trained employees to operate the Tractor and Implement.
4. Maintain the Tractor and Implement in a safe operational condition and maintain all shields and guards on the equipment.
5. Ensure the Tractor is equipped with a functional ROPS and seat belt and require that the employee operator securely fasten the safety belt and operate with the ROPS in the raised position at all times.
6. Forbid the employee operator to carry additional riders on the Tractor or Implement.
7. Provide the required tools to maintain the Tractor and Implement in a good safe working condition and provide the necessary support devices to secure the equipment safely while performing repairs and service.
8. Require that the employee operator stop operation if bystanders or passersby come within 300 feet.

**Child Labor Under 16 Years of Age**

Some regulations specify that no one under the age of 16 may operate power machinery. It is your responsibility to know what these regulations are in your own area or situation. (Refer to U.S. Dept. of Labor, Employment Standard Administration, Wage & Home Division, Child Labor Bulletin #102.)



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# INTRODUCTION SECTION



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# INTRODUCTION



We are pleased to have you as a Bush Hog customer. Your Rotary Cutter has been carefully designed with care and built with quality materials by skilled workers to give maximum service with minimum down time. This manual is provided to give you the necessary operating and maintenance instructions for keeping your rotary cutter in top operating condition. Careful use and timely service saves extensive repairs and costly downtime losses. Please read this manual thoroughly. Understand what each control is for and how to use it.

No shielding is 100% effective in preventing thrown objects. The possibility of injury and property damage from this hazard can be substantially reduce by selecting proper shielding, maintaining the mower and shielding in good operational condition, inspecting the area for foreign debris before mowing, operating the mower at a minimum cutting height of 3/4", and keep unprotected persons at a minimum distance of 300 feet from the mower at all times during operation.

Safety is of primary importance to the owner/operator and to the manufacturer. Observe all safety precautions decaled on the machine and noted throughout the manual for safe operation of implement. If any assistance or additional information is needed, contact your authorized Bush Hog dealer. The owner/operator/dealer should know and understand the Safety Messages before assembly and be aware of the hazards of operating this cutter during assembly, use, and maintenance. The Safety Alert Symbol combined with a Signal Word, as seen below, is intended to warn the owner/operator of impending hazards and the degree of possible injury faced when operating this machine.

**⚠ DANGER** Indicates an imminently hazardous situation that, if not avoided, WILL result in DEATH OR VERY SERIOUS INJURY.

**⚠ WARNING** Indicates an imminently hazardous situation that, if not avoided, COULD result in DEATH OR SERIOUS INJURY.

**⚠ CAUTION** Indicates an imminently hazardous situation that, if not avoided, MAY result in MINOR INJURY.

**Important** Identifies special instructions or procedures that, if not strictly observed, could result in damage to, or destruction of the machine, attachments or the environment.



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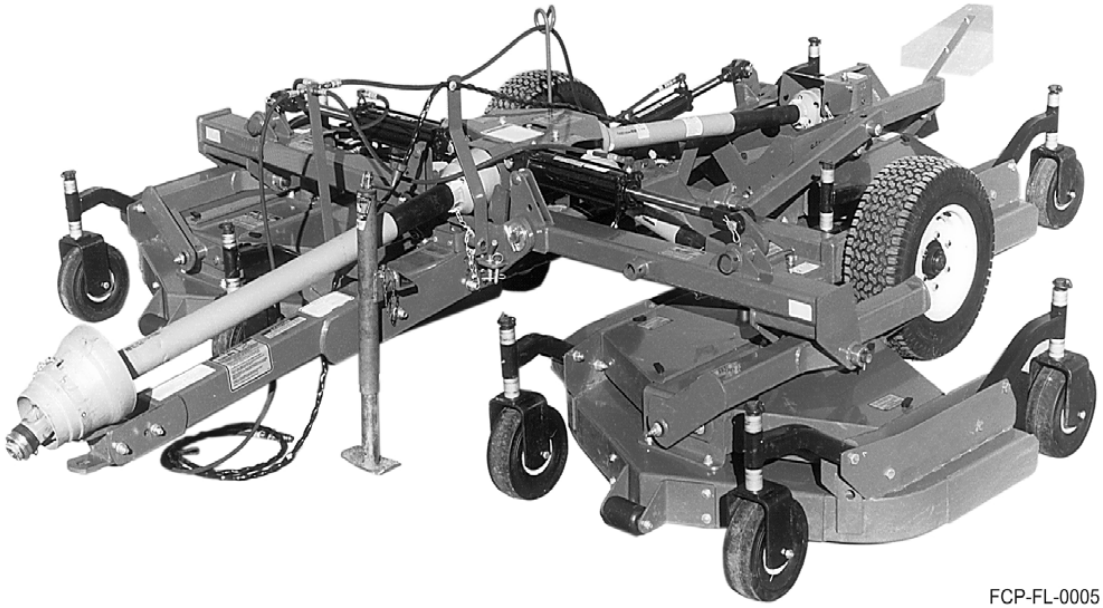
# INTRODUCTION



FCP-FL-0005

The Bush Hog Model TD1100 is designed for turf maintenance applications where a high quality of cut on turf grasses is required. The caster wheel arrangement along with the flexible, floating deck attachment and the standard front mounted rollers, all work together to give an even cut and minimize scalping. Power from the tractor is transmitted through a telescoping driveline to a belt drive and gearbox arrangement which allows either wing unit to be folded up to 30º while still operating. Power is passed to the spindle housing by a B-Section, Kevlar reinforced belt. Drivetrain protection is provided by belt slippage.

Literature Page

www.algqr.com/ble

Front and rear and left and right are determined by the normal direction of travel, the same as driving an automobile.

| | TD1100 |
|---|---|
| Cutting Width | 11’ |
| Deck Width | (3) 4 ft. |
| Transport Width | 78” |
| Cutting Height | 3/4 to 4-1/2”” |
| Minimum Tractor HP | 30 PTO |
| Transport Height | 75” |
| Transport Length | 12’ |
| Belts | Kevlar |
| Belt Adjustment | Spring Loader Idler |
| Weight (Approx) | 2450 lbs. |
| Tractor PTO | 540 RPM |
| Wing Flex | 30º Up & 10º Down |
| Deck Thickness | 7 Gauge |
| Tire Size | 23x 9.5 (2) |
| Front Roller Size (Std.) | 3x5 inches |
| Hitch | Pull Type, Clevis Hitch, Three-Position Adjustment |

| | TD1100 |
|---|---|
| **Blade Tip Speed** | 18,468 FPM |
| Gearbox Rating | |
| Center & Wings | 140 HP |
| Transfer Box | 80 HP |
| Limited Warranty | 5 Year |
| Driveline Size | |
| Main | CAT IV 80º CV |
| Wings | CAT lll |



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## Attention Owner/Operator

BEFORE OPERATING THIS MACHINE:

1. Carefully read the Operator's Manual, completely understand the Safety Messages and instructions, and know how to operate correctly both the tractor and implement.

2. Fill out the Warranty Card in full. Be sure to answer all questions, including the Serial Number of the implement. Mail within 30 days of delivery date of this implement.

***NOTE:*** *Warranties are honored only if completed "Owner Registration and Warranty" forms are received by Alamo Group within thirty days of delivery of the implement.*

3. Record the Mower Model and Serial Numbers on the Warranty page at the front of the Operator's Manual. Keep this as part of the permanent maintenance file for the implement.

WARNING
Non-genuine parts can fail catastrophically.
TO AVOID SERIOUS INJURY OR DEATH:
• ONLY use genuine Bush Hog replacement parts.
• Non-genuine parts can fail creating hazardous conditions for operator and bystanders.
Contact local dealer or Bush Hog about repair parts at:
2501 Griffin Ave.,Selma, Al 36701
Customer Service: 800-363-6096.
Email: contactus@bushhog.com
www.algqr.com/bpm
D559_1

IMPORTANT
BE AWARE
BE ALERT
BE ALIVE
BE TRAINED
Before Operating this Mower
To prevent serious injury to yourself and/or bystanders, be trained in Safe Mowing Practices. Alamo Group Companies as well as AEM and FEMA provide training material that is critical for your Safety and the Safety of others when operating this equipment. Make these Safety Procedures an important part of every workday. Read and understand the Operator's Manual. Do not let untrained individuals operate this equipment. Contact your Dealer, AEM (www.aem.org), FEMA (314-878-2304, www.FarmEquip.org), or Alamo Group (www.Alamo-Group.com) for information on training material or courses that provide training in Safer Operating Practices for Mowers. D559_2
www.algqr.com/bve
D559



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# LIMITED WARRANTY

Bush Hog warrants to the original purchaser of any new Bush Hog equipment, purchased from an authorized Bush Hog dealer, that the equipment be free from defects in material and workmanship for a period of one (1) year for non-commercial, state and municipalities' use and ninety (90) days for commercial use from date of retail sale. The obligation of Bush Hog to the purchaser under this warranty is limited to the repair or replacement of defective parts.

Replacement or repair parts installed in the equipment covered by this limited warranty are warranted for ninety (90) days from the date of purchase of such part or to the expiration of the applicable new equipment warranty period, whichever occurs later. Warranted parts shall be provided at no cost to the user at an authorized Bush Hog dealer during regular working hours. Bush Hog reserves the right to inspect any equipment or parts which are claimed to have been defective in material or workmanship.

**DISCLAIMER OF IMPLIED WARRANTIES & CONSEQUENTIAL DAMAGES**

Bush Hog's obligation under this limited warranty, to the extent allowed by law, is in lieu of all warranties, implied or expressed, **INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE** and any liability for incidental and consequential damages with respect to the sale or use of the items warranted. Such incidental and consequential damages shall include but not be limited to: transportation charges other than normal freight charges; cost of installation other than cost approved by Bush Hog; duty; taxes; charges for normal service or adjustment; loss of crops or any other loss of income; rental of substitute equipment, expenses due to loss, damage, detention or delay in the delivery of equipment or parts resulting from acts beyond the control of Bush Hog.

**THIS LIMITED WARRANTY SHALL NOT APPLY:**

1. To vendor items which carry their own warranties, such as engines, tires, and tubes.
2. If the unit has been subjected to misapplication, abuse, misuse, negligence, fire or other accident.
3. If parts not made or supplied by Bush Hog have been used in connection with the unit, if, in the sole judgement of Bush Hog such use affects its performance, stability or reliability.
4. If the unit has been altered or repaired outside of an authorized Bush Hog dealership in a manner which, in the sole judgement of Bush Hog, affects its performance, stability or reliability.
5. To normal maintenance service and normal replacement items such as gearbox lubricant, hydraulic fluid, worn blades, or to normal deterioration of such things as belts and exterior finish due to use or exposure.
6. To expendable or wear items such as teeth, chains, sprockets, belts, springs and any other items that in the company's sole judgement is a wear item.

NO EMPLOYEE OR REPRESENTATIVE OF BUSH HOG IS AUTHORIZED TO CHANGE THIS LIMITED WARRANTY IN ANY WAY OR GRANT ANY OTHER WARRANTY UNLESS SUCH CHANGE IS MADE IN WRITING AND SIGNED BY BUSH HOG'S SERVICE MANAGER, 2501 GRIFFIN AVE., SELMA, ALABAMA 36703.

Record the model number, serial number and date purchased. This information will be helpful to your dealer if parts or service are required.

MAKE CERTAIN THE WARRANTY
HAS BEEN FILED WITH BUSH HOG
SELMA, ALABAMA

MODEL NUMBER _____

SERIAL NUMBER _____

DATE OF RETAIL SALE _____



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# ASSEMBLY SECTION



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# ASSEMBLY

**DANGER** Operating with PTO speed over 540 RPM can cause excessive vibration with subsequent machine failure which can cause serious injury or even death. Never exceed 600 RPM.

## DEALER SET-UP INSTRUCTIONS

This mower is shipped completely assembled from the factory.

**CAUTION** Always use personal protection devices such as eye and ear protectors during assembly.



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# OPERATION SECTION



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# OPERATION

## Bush Hog TD1100 TRI-DECK FINISHING MOWER
## ROTARY MOWER OPERATION INSTRUCTIONS

Bush Hog TD1100 mowers are manufactured with quality material by skilled workers. These mowers are designed for cutting grass and small weeds. The mower is equipped with protective deflectors and/or chain guards to prevent objects being thrown from the mower by the blades, however, no shielding is 100% effective. All shields, guards, deflectors, and chains equipped on the unit must be maintained on the mower in good operational condition.

It is the operator's responsibility to be knowledgeable of all potential operating hazards and to take every reasonable precaution to ensure oneself, others, animals, and property are not injured or damaged by the mower, tractor, or a thrown object. Do not operate the mower if passersby, pets, livestock, or property are directly in front or to the rear of the unit.

This section of the Operator's Manual is designed to familiarize, instruct, and educate safe and proper mower use to the operator. Pictures contained in this section are intended to be used as a visual aid to assist in explaining the operation of a rotary mower and are not of a TD1100. Some pictures may show shields removed for purposes of clarity. NEVER OPERATE this implement without all shields in place and in good operational condition. The operator must be familiar with the mower and tractor operation and all associated safety practices before operating the mower and tractor. Proper operation of the mower, as detailed in this manual, will help ensure years of safe and satisfactory use of the mower.

**IMPORTANT:** Check blade retaining bolt torque after 10 hours of operation. Retighten blade bolt to proper torque of 76 ft. lbs.

**READ AND UNDERSTAND THE ENTIRE OPERATING INSTRUCTIONS AND SAFETY SECTION OF THIS MANUAL AND THE TRACTOR MANUAL BEFORE ATTEMPTING TO USE THE TRACTOR AND IMPLEMENT.** If you do not understand any of the instructions, contact your nearest authorized dealer for a full explanation. Pay close attention to all safety signs and safety messages contained in this manual and those affixed to the implement and tractor. *OPS-U- 0001*

READ, UNDERSTAND, and FOLLOW the following Safety Messages. Serious injury or death may occur unless care is taken to follow the warnings and instructions stated in the Safety Messages. Always use good common sense to avoid hazards. (SG-2)

**PELIGRO** Si no lee ingles, pida ayuda a alguien que si lo lea para que le traduzca las medidas de seguridad. (SG-3)

***NOTE:*** *TD1100 units using standard single acting hydraulic cylinders require tractors which are equipped with a "Float" position in their hydraulic systems to allow the wing decks to follow the contour of the ground. If your particular model tractor does not have a "Float" position in its hydraulic system, a double acting hydraulic cylinder conversion kit should be installed. See your Bush Hog Dealer.*

*Before operation, service all locations outlined in Maintenance Section - "Lubrication" and remove transport lock pins from mower decks as shown. Unpin inside wing tires and reposition into a trailing position and repin in place. Run the mower in a static condition at half throttle for 30 minutes. Inspect all belts for proper tension; check gearboxes for proper oil level; and check to make sure blade spindles are not overheating.*



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# 1. OPERATOR REQUIREMENTS

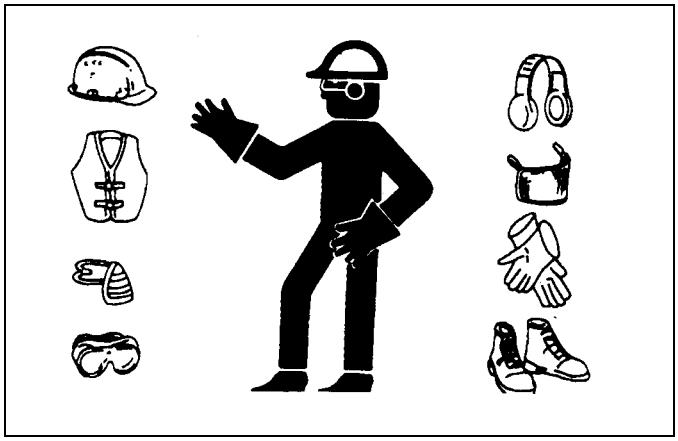
Safe operation of the unit is the responsibility of a qualified operator. A qualified operator has read and understands the implement and tractor Operator's Manuals and is experienced in implement and tractor operation and all associated safety practices. In addition to the safety messages contained in this manual, safety signs are affixed to the implement and tractor. If any part of the operation and safe use of this equipment is not completely understood, consult an authorized dealer for a complete explanation.

If the operator cannot read the manuals for themselves or does not completely understand the operation of the equipment, it is the responsibility of the supervisor to read and explain the manuals, safety practices, and operating instructions to the operator.

Safe operation of equipment requires that the operator wear approved Personal Protective Equipment (PPE) for the job conditions when attaching, operating, servicing, and repairing the equipment. PPE is designed to provide operator protection and includes the following safety wear:

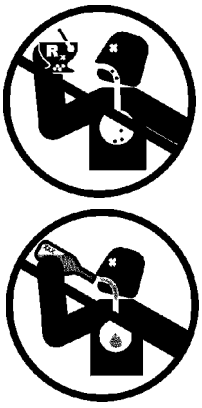
**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

- Always Wear Safety Glasses
- Hard Hat
- Steel Toe Safety Footwear
- Gloves
- Hearing Protection
- Close Fitting Clothing
- Respirator or Filter Mask (depends on operating conditions) *OPS-U- 0002*



**⚠ DANGER**

DO NOT use drugs or alcohol immediately before or while operating the Tractor and Implement. Drugs and alcohol will affect an operator's alertness and coordination and therefore affect the operator's ability to operate the equipment safely. Before operating the Tractor or Implement, an operator on prescription or over-the-counter medication must consult a medical professional regarding any side effects of the medication that would hinder their ability to operate the Equipment safely. NEVER knowingly allow anyone to operate this equipment when their alertness or coordination is impaired. Serious injury or death to the operator or others could result if the operator is under the influence of drugs or alcohol. (SG-27)





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# OPERATION

## 2. TRACTOR REQUIREMENTS

The tractor used to operate the mower must have the power capacity to lift, pull, and operate the Power Take Off (PTO) at the mower's rated speed while traveling at a ground speed between 2 and 5 MPH. Operating the mower with a tractor that does not meet the following requirements may cause tractor or mower damage and be a potential danger to the operator and passersby.

### Tractor Requirements and Capabilities

- Certified approved Roll-Over Protective Structure (ROPS) or ROPS cab and seat belt.
- Tractor Safety Devices ..... Slow Moving Vehicle (SMV) emblem, lighting, PTO master shield
- Tractor Horsepower- Minimum ..... TD1100 30 HP
- Drawbar ..... 14" Length - measured from end of PTO shaft to hitch pin hole, rated to carry mower tongue weight, safety chain attachment point
- Hydraulics ..... Single acting hydraulic selective control valve with float detent
- Power Take Off ..... 540 RPM

### 2.1 ROPS and Seat Belt

The tractor must be equipped with a Roll-Over-Protective-Structure (ROPS) (tractor cab or roll-bar) and seat belt to protect the operator from falling off the tractor, especially during a roll over where the driver could be crushed and killed. Only operate the tractor with the ROPS in the raised position and seat belt fastened. Tractor models not equipped with a ROPS and seat belt should have these life saving features installed by an authorized dealer. *OPS-U- 0003*

**⚠WARNING** Operate this Equipment only with a Tractor equipped with an approved roll-over-protective system (ROPS). Always wear seat belts. Serious injury or even death could result from falling off the tractor--particularly during a turnover when the operator could be pinned under the ROPS. (SG-7)

### 2.2 Tractor Safety Devices

If transporting or operating the tractor and implement near a public roadway, the tractor must be equipped with proper warning lighting and a Slow Moving Vehicle (SMV) emblem which are clearly visible from the rear of the unit. Lights and a SMV emblem must be equipped directly on implements if the visibility of the tractor warning signals are obscured.

Maintain all manufacturer equipped safety shields and guards. Always replace shields and guards that were removed for access to connect, service, or repair the tractor or implement. Never operate the tractor PTO with the PTO master shield missing or in the raised position. *OPS-U- 0004*

### 2.3 Tractor Horsepower

The horsepower required to operate the mower depends on many factors including the vegetation to be cut, terrain condition, operator experience, and condition of the mower and tractor. For most mowing conditions, the TD1100 mower requires tractor with at least 30 HP. Operating the mower with a tractor that does not have adequate power may damage the tractor engine.



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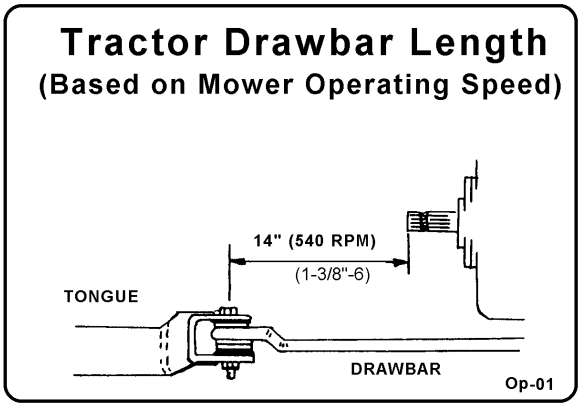
## 2.4 Drawbar

The tractor drawbar must be positioned at a certain length based on the operating speed of the mower to ensure proper driveline operation. 540 RPM mowers require the drawbar length measured from shaft end to hitch pin hole to be positioned at 14".

Ensure the drawbar is rated to carry the tongue weight of the mower.






## 2.5 Tractor Hydraulics

The mower is raised and lowered with three hydraulic cylinders, one for each section. Hydraulic lines are plumbed together and controlled by a single tractor hydraulic selective control valve. The tractor must be equipped with one single acting selective control valve with float detent to enable the mower sections to follow the contour of the terrain.

## 2.6 Front End Weight

A minimum of 20% total tractor weight must be maintained on the tractor front end at all times. Front end weight is critical to maintain steering control and to prevent the tractor from rearing up while driving. If the front end is too light, add weight until a minimum of 20% total weight is reached on the front tires. Front weights and weight carriers can be purchased through an authorized tractor dealership. *OPS-U- 0005*

## 2.7 Power Take Off (PTO)

Depending on the unit, the mower is designed to operate at a PTO speed of 540 RPM. Most tractors operate at either 540, or a combination of 540 and 1000 RPM PTO speeds. The operating speed of the mower and tractor can be determined by the number of splines on the driveline yoke and PTO output shaft. Those operating at 540 RPM will have a 6-spline shaft and those operating at 1000 RPM will have a 21-spline shaft. ***Note:*** *Refer to the tractor owner's manual for instructions to change PTO speeds on models that operate at more than one speed.*

If operating an older model tractor where the tractor's transmission and PTO utilize one master clutch, an over-running clutch must be used between the PTO output shaft and the driveline of the mower. An authorized tractor dealer can provide the over-running clutch and its installation if needed. *OPS-U- 0006_B*



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**DANGER** **DO NOT** use a PTO adapter to attach a non-matching Implement driveline to a Tractor PTO. Use of an adapter can double the operating speed of the Implement resulting in excessive vibration, thrown objects, and blade and implement failure. Adapter use will also change the working length of the driveline exposing unshielded driveline areas. Serious bodily injury and/or equipment failure can result from using a PTO adapter. Consult an authorized dealer for assistance if the Implement driveline does not match the Tractor PTO. (S3PT-14)

**WARNING** Never operate the Tractor and Mower if the Implement input driveline is directly connected to the Tractor transmission. Tractor braking distances can be substantially increased by the momentum of the rotating Mower blades driving the Tractor transmission even though the Tractor clutch has been disengaged. Install an over running clutch between the Tractor PTO and the Mower driveline to prevent this potentially dangerous situation. (S3PT-16)

## 3. GETTING ON AND OFF THE TRACTOR

Before getting onto the tractor, the operator must read and completely understand the implement and tractor operator manuals. If any part of either manual is not completely understood, consult an authorized dealer for a complete explanation. *OPS-U- 0007*

**WARNING** Do not mount or dismount the Tractor while the tractor is moving. Mount the Tractor only when the Tractor and all moving parts are completely stopped. (SG-12)

### 3.1 Boarding the Tractor

Use both hands and equipped handrails and steps for support when boarding the tractor. Never use control levers for support when mounting the tractor. Seat yourself in the operator's seat and secure the seat belt around you.

Never allow passengers to ride on the tractor or attached equipment. Riders can easily fall off and be seriously injured or killed from falling off and being ran over. It is the operator's responsibility to forbid all extra riders at all times. *OPS-U- 0008*

**DANGER** Never allow children to operate, ride on, or come close to the Tractor or Implement. Usually, 16-17 year-old children who are mature and responsible can operate the implement with adult supervision, if they have read and understand the Operator's Manuals, been trained in proper operation of the tractor and Implement, and are physically large enough to reach and operate the controls easily. (SG-11)

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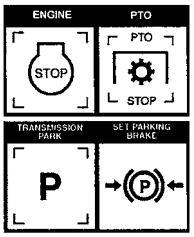
**⚠ DANGER** Never allow children or other persons to ride on the Tractor or Implement. Falling off can result in serious injury or death. (SG-10)

## 3.2 Dismounting the Tractor

Before dismounting, park the tractor and implement on a reasonably level surface, apply the parking brake, idle the engine down, disengage the PTO, and lower the implement to the ground. Shut down the tractor engine according to the operator's manual, remove the key, and wait for all motion to completely stop. Never leave the seat until the tractor, its engine and all moving parts have come to a complete stop.

Use hand rails and steps when exiting the tractor. Be careful of your step and use extra caution when mud, ice, snow or other matter has accumulated on the steps or hand rails. Use all handrails and steps for support and never rush or jump off the tractor. *OPS-U- 0009*

**⚠ DANGER** BEFORE leaving the tractor seat lower the implement, set the parking brake and/or set the tractor transmission in parking gear, disengage the PTO, stop the engine, remove the key, and wait for all moving parts to stop. Place the tractor shift lever into a low range or parking gear to prevent the tractor from rolling. Never dismount a Tractor that is moving or while the engine is running. Operate the Tractor controls from the tractor seat only. (SG-9)





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# OPERATION

## 4. STARTING THE TRACTOR

The operator must have a complete understanding of the placement, function, and operational use of all tractor controls before starting the tractor. Review the tractor operator's manual and consult an authorized dealer for tractor operation instructions if needed.

**Essential Tractor Controls:**

- Locate the light control switch.
- Locate the engine shut off control.
- Locate the brake pedals and the clutch.
- Locate the PTO control.
- Locate the 3-point hitch control lever.
- Locate the hydraulic remote control levers.

**Before starting the tractor ensure the following:**

- Conduct all pre-start operation inspection and service according to the tractor operator's manual.
- Make sure all guards, shields, and other safety devices are securely in place.
- The parking brake is on.
- The PTO control lever is disengaged.
- The 3-point hitch control lever is in the lowered position.
- The hydraulic remote control levers are in the neutral position.
- The tractor transmission levers are in park or neutral.

Refer to the tractor owner's manual for tractor starting procedures. Only start the tractor while seated and belted in the tractor operator's seat. Never bypass the ignition switch by short circuiting the starter solenoid.

After the tractor engine is running, avoid accidental contact with the tractor transmission to prevent sudden and unexpected tractor movement. *OPS-U-0028*

**⚠ DANGER** Never run the Tractor engine in a closed building or without adequate ventilation. The exhaust fumes can be hazardous to your health. (SG-23)

**⚠ DANGER** Start tractor only when properly seated in the Tractor seat. Starting a tractor in gear can result in injury or death. Read the Tractor operators manual for proper starting instructions. (SG-13)

## 5. CONNECTING THE MOWER TO THE TRACTOR

Use extreme caution when connecting the mower to the tractor. The mower should be securely resting at ground level or setting on blocks. Keep hands and feet from under the mower deck and clear of pinch points between the tractor hitch arms and mower pins. *OPS-R-0001*

**⚠ DANGER** Always shut the Tractor completely down, place the transmission in park, and set the parking brake before you or anyone else attempts to connect or disconnect the Implement and Tractor hitches. (S3PT-15)



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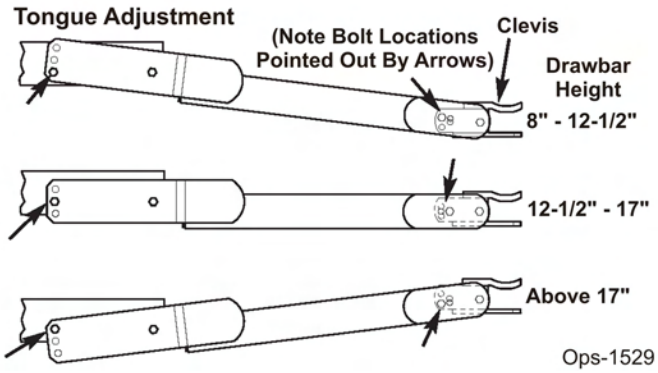
## 5.1 Connecting the Mower Tongue to the Tractor

1. The tractor must be equipped to operate at 540 RPM PTO speed and the drawbar length at 14”.
2. Using the parking jack, position the tongue clevis to the height of the tractor drawbar.
3. Board the tractor and start the engine. Back the tractor to the mower aligning the drawbar hitch hole with the mower tongue clevis. Turn off the tractor engine, place the tractor in park, and set the parking brake before dismounting.
4. To connect the mower, insert a 1” diameter approved pin through clevis and drawbar and retain in position with a lynch pin retainer or equivalent.
5. It is important that the TD1100 be operated in a level position. Leveling can be accomplished by adjusting the implement hitch to the tractor drawbar height and leveling the mower frame by use of the adjustable jackstand.
6. If after properly leveling the mower deck the drawbar height is less than 8”, a standard pull pin may be too long. To prevent turf damage in uneven terrain the standard pin should be replaced with a 1 x 5” Grade 5 bolt with locknut securely tightened.
7. Securely attach the mower safety chain to the tractor drawbar or drawbar support frame.
8. Lower the jack until the tongue is completely supported by the drawbar. Remove jack from the tongue and place on storage bracket of the mower.




## 5.2 Safety Tow Chain

If the mower is towed on a public roadway, a safety chain with tensile strength equal to or greater than the gross weight of the mower must be connected between the tractor and mower. This will help control the implement in the event the tongue becomes disconnected from the drawbar. Make sure the chain is attached to a secure location on the tractor and not to an intermediate support.

After connecting both ends of the safety chain, drive the tractor to the right and left to check for proper chain length. Adjust length as necessary and allow only enough slack in the chain to make a maximum turn in both directions. When not in use, store the safety chain to protect it from mud or standing water by wrapping the chain around the tongue. Replace the safety chain if one or more links or end fittings are broken, stretched or otherwise damaged or deformed. *OPS-U-0039*



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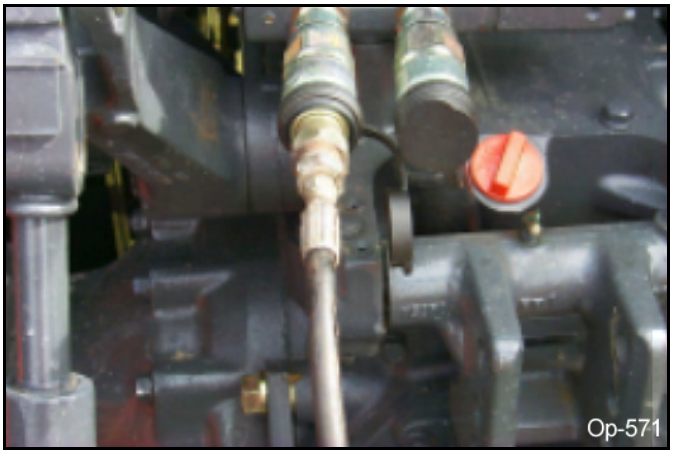
IMPORTANT: Scan this QR Code with your smart phone to link to the PAMI Safe Implement Hitching Manual for more information on correctly connecting agricultural tractors to implements. Or type in your internet browser the following web address: www.algqr.com/hme *Ops-0008-MISC*

## 5.3 Connecting Mower Hydraulics

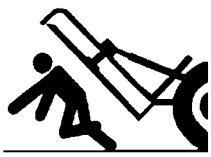



1. With the tractor shut down and secured in position, move the hydraulic remote valve lever back and forth several times or place the hydraulic lever in the float position to relieve all hydraulic pressure. When connecting the mower hydraulic lines to the tractor, keep the hose, quick couplers, and swivels free of dirt and other contaminants. Wipe all dirt and other contaminants from the tractor hydraulic remote ports and mower hydraulic hose coupler with a clean rag before connecting.
2. Connect mower hydraulic hose to the tractor remote port. Ensure the coupler locks in place making a good connection. Different tractor models receive hydraulic lines differently. Refer to the tractor Operator's Manual for connecting and operating hydraulics for your particular model tractor.
3. Ensure hydraulic hoses will not contact or become entangled with mower drivelines, do not bind when turning, or become pinched or kinked when operating, raising and lowering the mower.

# 6. SETTING THE MOWER

Properly setting the cutting height is essential for efficient and safe operation. A properly set mower will make a more uniform cut, distribute clippings more evenly, require minimal tractor work, and follow the contour of uneven terrain. ***NOTE:*** *Avoid very low cutting heights, striking the ground with the blades gives the most damaging shock loads and will cause damage to the mower and drive. Blades contacting the ground may cause objects to be thrown out from under the mower deck. Always avoid operating the mower at a height which causes the blades to contact the ground. OPS-U- 0010*

**⚠ DANGER** Never work under the Implement, the framework, or any lifted component unless the Implement is securely supported or blocked up to prevent sudden or inadvertent falling which could cause serious injury or even death. (SG-14)





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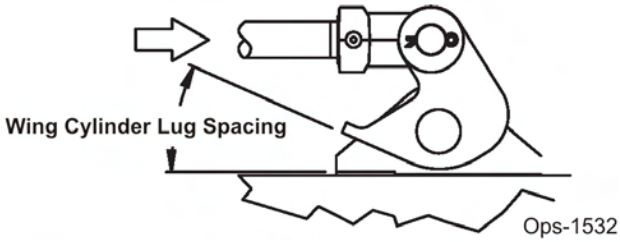
## 6.1 Cutting Height Adjustment

1. Using the tractor hydraulics, raise the mowers off the ground and support under it with secure blocking so not to let the mower drift down during maintenance.
2. Remove pin securing caster stem to caster arm. Remove caster stem from caster arm.
3. Place amount of spacers on caster stem to give desired cutting height. With no spacers on the bottom, a 3/4" cutting height is given.
4. Reinstall caster stem into caster arm. Place remaining spacers on caster stem above caster arm and install pin to retain.
5. Repeat operation for all caster wheels. Make certain all wheels are adjusted to the same height.

Ops-1531

**Standard Models with Single Acting Cylinders**

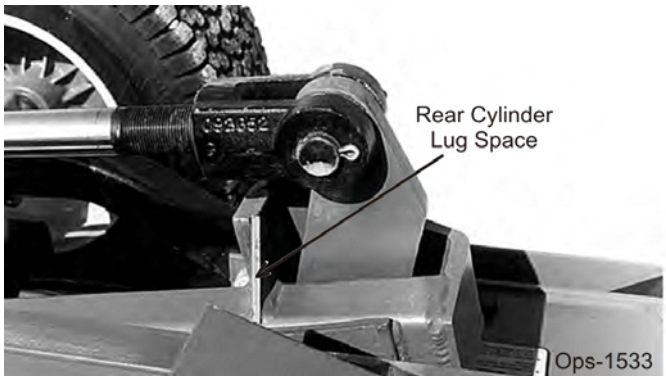
Start tractor. Lower cutter decks until it is supported by caster wheels and place hydraulic valve in "Float" position.



Ops-1532

**Double Acting Hydraulic Cylinder Conversion Kit**

Start tractor. Lower cutter deck until it is supported by caster wheels and **hydraulic cylinders are fully extende**d to allow mechanical float to operate.



Ops-1533



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# OPERATION

## 7. DRIVELINE ATTACHMENT

The driveline yoke and tractor PTO shaft must be dirt free and greased for attachment.

To connect the mower driveline to the tractor PTO output shaft, pull the driveline yoke collar back and align the grooves and splines of the yoke with those of the PTO shaft. Push the driveline yoke onto the PTO shaft, release the locking collar, and position the yoke until the locking collar balls are seated onto the PTO shaft. Push and pull the driveline back and forth several times to ensure a secure attachment. *OPS-R-0003_D*

**WARNING** When attaching the Implement input driveline to the Tractor PTO, it is important that the connecting yoke spring activated locking collar slides freely and the locking balls are seated securely in the groove on the Tractor PTO shaft. Push and pull the driveline back and forth several times to ensure it is securely attached. A driveline not attached correctly to the Tractor PTO shaft could come loose and result in personal injury and damage to the Implement. (S3PT-17)

### 7.1 Driveline Length Check

**WARNING** Before operating the Implement, check to make sure the Implement input driveline will not bottom out or become disengaged. Bottoming out occurs when the inner shaft penetrates the outer housing until the assembly becomes solid-it can shorten no more. Bottoming out can cause serious damage to the Tractor PTO by pushing the PTO into the Tractor and through the support bearings or downward onto the PTO shaft, breaking it off. A broken driveline can cause personal injury. (S3PT-18)

When fitting the mower to the tractor, the telescoping driveline must be inspected to ensure that at its most compressed position, the profiles do not “bottom out”, and when at its farthest extended position, there is sufficient engagement between the profiles to operate safely. At its shortest length, there must be at least a 1” clearance between each profile end and opposite profile universal joint. At its farthest operating extension, a minimum profile engagement of 12” must be maintained.



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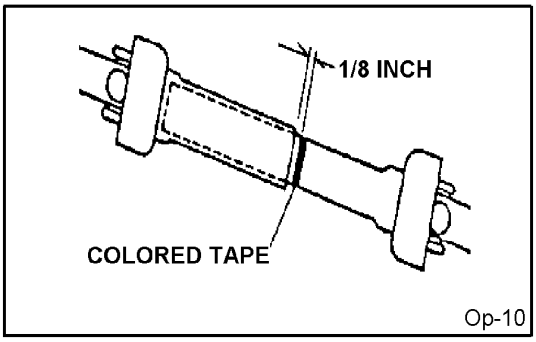
**"Bottoming Out" Check Procedure**

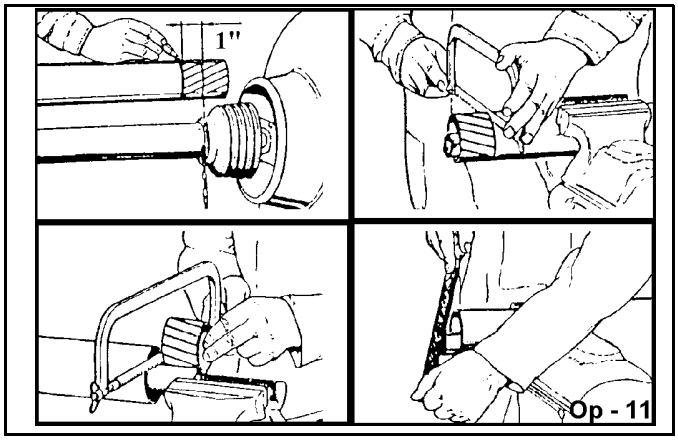
- Disconnect driveline from the tractor and slide the profiles together until fully compressed.
- Place a mark on the inner shield 1/8" from the end of the outer shield and reattach the driveline to the PTO shaft.
- With the ***PTO NOT TURNING***, slowly drive the tractor with mower attached through the sharpest turn possible and watch shaft movement. With the ***PTO NOT TURNING***, slowly drive the tractor with the mower attached through the most severe terrain conditions expected and watch shaft movement.
- If the distance between the mark and the outer shield becomes less than 2" at any point there is a potential problem bottoming out the driveline and the driveline should be shortened. *OPS-R-0004_E*



**Driveline in maximum compressed position**

**Shorten the driveline profiles as follows:**

- Remove the driveline from the tractor.
- Position the mower to the point with the shortest distance between the tractor PTO shaft and cutter gearbox. Shut down the tractor and securely block the mower in this position.
- Pull driveline apart and reattach yoke to PTO shaft.
- Hold driveline sections parallel to one another and measure back 1" from yoke of each shaft and place mark on opposite section. Cut this length off with a saw.
- Round off all sharp edges and debur.
- Thoroughly grease then reinstall the driveline.
- Recheck for proper operation.




**Engagement Check Procedure**

- With the driveline attached, position the mower to the point where the telescoping driveline is at its maximum extension. Completely shut down the tractor and secure in position.
- Mark the inner driveline shield 1/8" from the end of the outer shield.
- Disconnect the driveline from the tractor and separate the two driveline halves.
- Measure the distance from the mark to the end of the inner profile. This length is the amount the driveline profiles were engaged.
- If the engaged length is less than 12" for a CV driveline and less than 6" for a non-CV driveline, the shaft is considered too short and should be replaced with a longer shaft. Consult an authorized dealer to purchase the required driveline length.

***NOTE:*** *If the driveline cannot be shortened and still maintain the required profile engagement, the operator must be made aware of terrain conditions and avoid situations which pose a potential problem to avoid damaging the driveline. OPS-R-0005*



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## 7.2 Constant Velocity (CV) Driveline

For mowers equipped with a Constant Velocity (CV) driveline, the maximum turning angle between the tractor and mower must be determined to ensure the joint angle does not over-extend which can cause CV joint damage. Constant Velocity joints enable the driveline to operate smoothly with no vibrations and clattering at angles up to 70°. Angles greater than 80° can result in mechanical damage to the CV joint and mower driveline.

The Constant Velocity joint must be lubricated every 8 hours of operation as specified in the Maintenance Section. Failure to properly lubricate the joint will result in accelerated wear and joint component failure.

**CV Driveline Maximum Angle Check Procedure**

With the **mower attached** to the tractor and the **driveline disconnected** from the tractor PTO stub make a hard left turn until there is approximately a 1" clearance between the left rear tractor tire and mower frame or tongue.

Stop and completely shut down the tractor. Place the tractor in Park and apply the Parking Brake before dismounting.

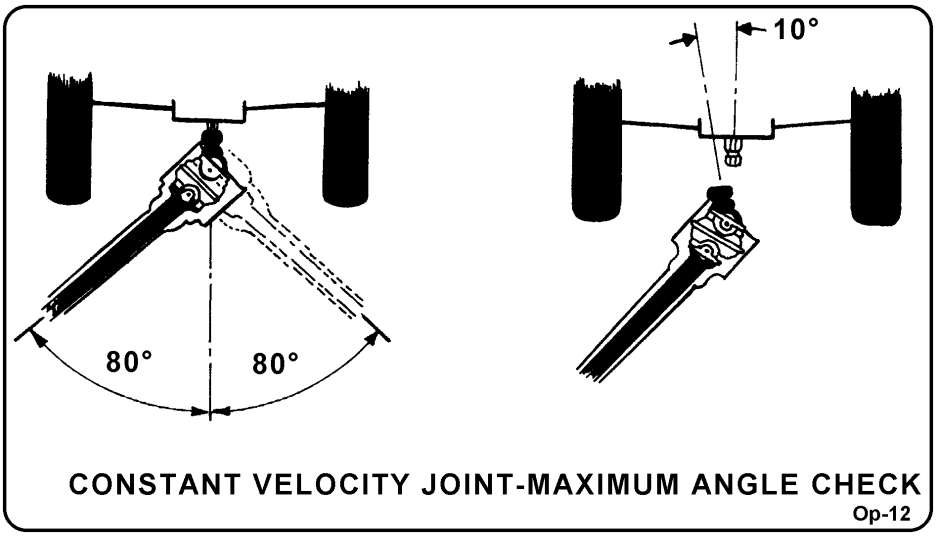
Check the CV joint at this maximum turning radius by holding the driveline yoke above the PTO shaft and then angle the CV joint to its maximum angle. A minimum difference of 10 degrees between the center line of the yoke and the PTO shaft must be maintained to ensure the joint will not be over angled. If the joint cannot be angled at least 10°, there is a potential problem of over-angling the joint while making sharp turns.

Solutions: To ensure the joint is not damaged, check the following:

Check the drawbar length to ensure that it is at the proper length for the RPM speed of the mower.

Move the tractor rear tires wider apart to limit the tractor turning radius.

Position the mower at multiple angles and perform the above procedure. Determine the sharpest turning radius that maintains a safe operating angle and note this position to the operator. *OPS-R-0006*




CONSTANT VELOCITY JOINT-MAXIMUM ANGLE CHECK
Op-12



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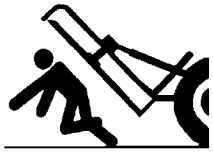
**⚠ DANGER** Do not turn so sharp or lift mower so high to produce a severe "knocking" of the Driveline which will cause accelerated wear and breakage of drive train components and could result in possible injury from the separated Driveline sections. (SRM-04)

## 8. PRE-OPERATION INSPECTION AND SERVICE

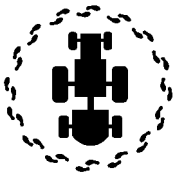
Before each use, a pre-operation inspection and service of the implement and tractor must be performed. This includes routine maintenance and scheduled lubrication, inspecting that all safety devices are equipped and functional, and performing needed repairs. DO NOT operate the unit if the pre-operation inspection reveals any condition affecting safe operation. Perform repairs and replacement of damaged and missing parts as soon as noticed. By performing a thorough pre-operation inspection and service, valuable down time and repair cost can be avoided. *OPS-U-0029*

**⚠ DANGER** Always disconnect the main PTO Driveline from the Tractor before performing service on the Implement. Never work on the Implement with the tractor PTO driveline connected and running. Rotating Parts, Blades or Drivelines could turn without warning and cause immediate entanglement, injury or death. (S3PT-11)

**⚠ DANGER** Never work under the Implement, the framework, or any lifted component unless the Implement is securely supported or blocked up to prevent sudden or inadvertent falling which could cause serious injury or even death. (SG-14)



**⚠ WARNING** Periodically inspect all moving parts for wear and replace when necessary with authorized service parts. Look for loose fasteners, worn or broken parts, and leaky or loose fittings. Make sure all pins have cotter pins and washers. Serious injury may occur from not maintaining this machine in good working order. (SG-21)



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## 8.1 Tractor Pre-Operation Inspection/Service

Refer to the tractor operator's manual to ensure a complete pre-operation inspection and scheduled service is performed according to the manufacturers recommendations. The following are some of the items that require daily service and inspection:

- Tire condition/air pressure
- Wheel lug bolts
- Steering linkage
- PTO shield
- SMV sign is clean and visible
- Tractor's lights are clean and functional
- Tractor Seat belt is in good condition
- Tractor ROPS is in good condition
- ROPS is in the raised position
- No tractor oil leaks
- Radiator free of debris
- Engine oil level and condition
- Engine coolant level and condition
- Power brake fluid level
- Power steering fluid level
- Fuel condition and level
- Sufficient lubrication at all lube points
- Air filter condition *OPS-U-0030*

## 8.2 Mower Pre-Operation Inspection/Service

Before each mower use, a complete inspection and service is required to ensure the mower is in a good and safe working condition. Damaged and/or broken parts should be repaired and/or replaced immediately. To ensure the mower is ready for operation, conduct the following. *OPS-R-0007*

The operator's manual and safety signs affixed on the unit contain important instructions on the safe and proper use of the equipment. Maintain these important safety features on the implement in good condition to ensure the information is available to the operator at all times.

- Ensure the manual canister is secured to the equipment with the operator's manual inside.
- Ensure all safety signs are in place and legible. Replace missing, damaged, and illegible decals. *OPS-U- 0011*



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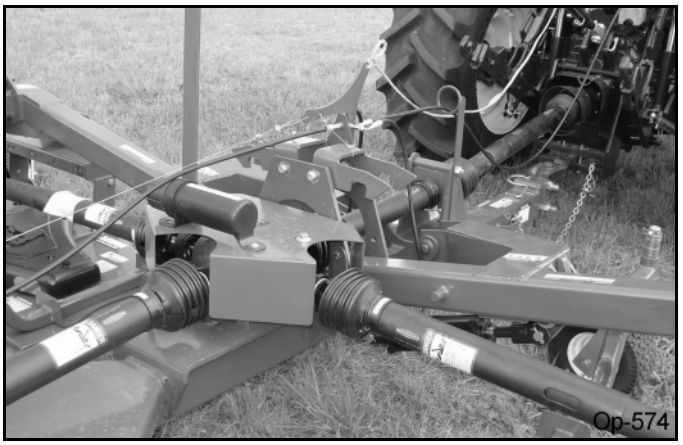
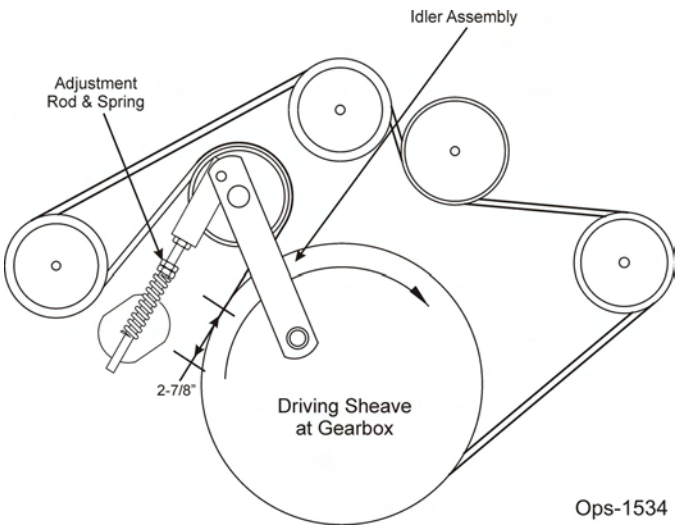
- Check that the main driveline securely attached to the tractor and the locking collar is seated in the groove of the PTO Shaft.
- Ensure wing drivelines are secure at both ends.
- Ensure the mower hitch is securely attached to the tractor drawbar with a proper size bolt and secured nut.
- Ensure that a properly rated safety tow chain is equipped securing the mower to the tractor. *OPS-R-0073*

- Ensure the driveline integral shields are in good condition and rotate freely.
- Inspect that all bolts and screws are in position and are properly torqued. *OPS-R-0049*




- Inspect the condition of the drive belts.
- Ensure driveline shield and drive belt shields are in place and in good repair.
- Ensure the tractor PTO master shield is in place, lowered and in good condition. *OPS-R-0064_E*



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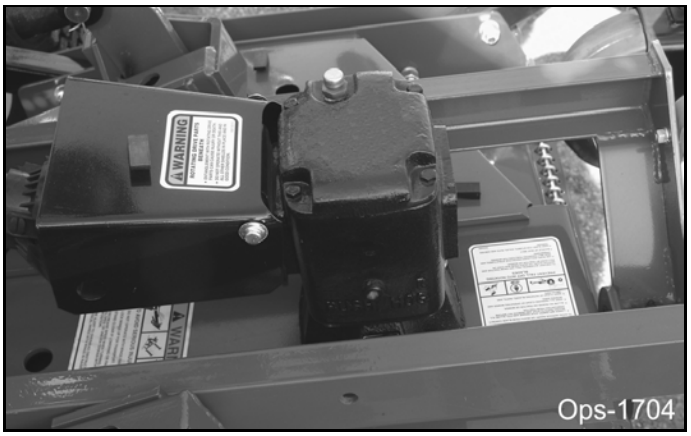
- Inspect oil level in all gearboxes and replenish if needed. A low oil level is a warning sign that the gearbox may be cracked or its seal damaged and needs to be replaced.
- Perform scheduled lubrication as specified in the maintenance section. *OPS-R-0076_C*




- Inspect cutter knives and knife pins for looseness and excessive wear. Make sure the mower is securely blocked up before crawling beneath. Replace damaged, worn, and missing knives as complete sets to maintain cuttershaft balance.
- Remove any grass or other debris which may be wrapped around the cuttershafts.
- Inspect the condition of deck skid shoes and hardware. *OPS-R-0050*

- Ensure each hydraulic cylinder is installed and retained correctly. Ensure the proper size pins are used to retain the cylinders in place and are secured with pins.
- Check for hydraulic oil leaks on the cylinders, along the hydraulic lines, and at tractor hydraulic ports. **IMPORTANT**: DO NOT use your hands to check for oil leaks. Use a piece of heavy paper or cardboard to check for hydraulic oil leaks. *OPS-R-0013_D*

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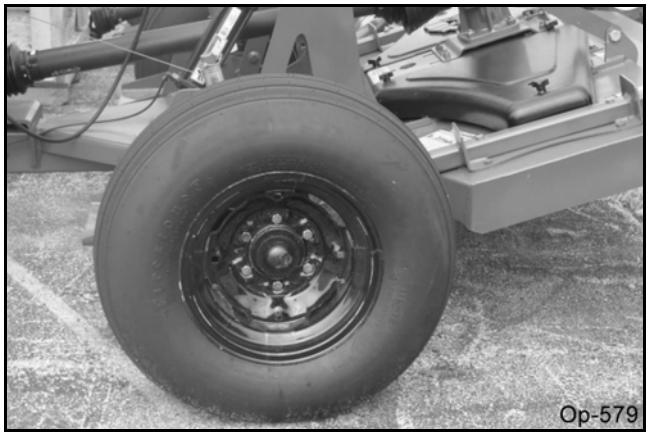
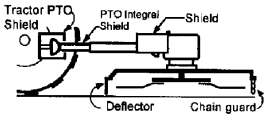
- Inspect mower tire condition, wheel bearings, and lug nut torque.
- Check the condition of the wing hinge pins.
- Check all the overall condition of the mower main frame. *OPS-R-0051*






**⚠ DANGER**

All Safety Shields, Guards and Safety devices including (but not limited to) - the Deflectors, Chain Guards, Steel Guards, Gearbox Shields, PTO integral shields, and Retractable Door Shields should be used and maintained in good working condition. All safety devices should be inspected carefully at least daily for missing or broken components. Missing, broken, or worn items must be replaced at once to reduce the possibility of injury or death from thrown objects, entanglement, or blade contact. (SGM-3)




**⚠ DANGER**

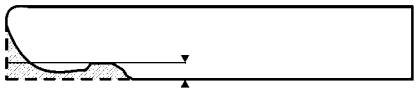
Replace bent or broken blades with new blades. NEVER ATTEMPT TO STRAIGHTEN, WELD, OR WELD HARDFACING ON BLADES SINCE THIS WILL LIKELY CRACK OR OTHERWISE DAMAGE THE BLADE WITH SUBSEQUENT FAILURE AND POSSIBLY CAUSE SERIOUS INJURY FROM THROWN BLADES. (SGM-10)

**⚠ DANGER**

Inspect the Blades daily for abnormal wear. REPLACE BLADES IMMEDIATELY if any blade has:

- Become bent or deformed from it's original shape or
- Any cracks are visible, or
- Deep gouges in the blade's surface are present, or
- Gouges or chipped areas in the cutting edge are larger than 1/2", or
- The material on the leading edge has been worn away by more than 1/2"

Failure to replace abnormally worn blades may lead to catastrophic failure of the blades and ejection of the broken part with tremendous force which may cause serious bodily injury or death. *OPS-U-0032_A*



1/2" MAXIMUM
(12.7mm)

Original Blade Edge

**NOTE:**
Replace Blades in pairs after no more than 1/2" (12.7mm) wear

**Op-23**



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# OPERATION

## Finishing Mower PRE-OPERATION Inspection

BUSH HOG®

Mower ID#_____Make_____

Date:_____Shift_____

**WARNING** **Before conducting the inspection, make sure the tractor engine is off, all rotation has stopped and the tractor is in park with the parking brake engaged. Make sure the mower is resting on the ground or securely blocked up and all hydraulic pressure has been relieved.**

| Item | Condition at Start of Shift | Specific Comments if not O.K. |
|---|---|---|
| The Operator's Manual is in the canister on the mower | | |
| All safety decals are in place and legible | | |
| The tongue/hitch connection bolts & pins are tight | | |
| There are no cracks on hitch | | |
| The tow chain is secured to the tractor & mower | | |
| The hydraulic cylinders pins are tight | | |
| There are no leaking or damaged hoses | | |
| The mower deck is clear of cut grass and debris | | |
| Chain guards/deflectors are in place & in good condition | | |
| Driveline/gearbox shields are in good condition | | |
| Driveline clutches are in good condition; not frozen | | |
| Driveline telescoping members & U-joints are lubricated | | |
| Driveline yokes are securely attached to PTO & mower | | |
| Gearbox mounting bolts are tight | | |
| Gearbox oil is at the proper level | | |
| Blade carrier retaining nut is tight | | |
| Blades are not chipped, cracked or bent | | |
| Blade bolts are tight | | |
| Wheel lug nuts are tight | | |
| Transport locks are in good condition | | |

Operator's Signature:_____

**DO NOT OPERATE an UNSAFE TRACTOR or MOWER**



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## Tractor PRE-OPERATION Inspection

BUSH HOG®

Tractor ID#:_____Make:_____

Date:_____Shift:_____

**WARNING** **Before conducting the inspection, make sure the tractor engine is off, all rotation has stopped and the tractor is in park with the parking brake engaged. Make sure the implement is resting on the ground or securely blocked up and all hydraulic pressure has been relieved.**



| Item | Condition at Start of Shift | Specific Comments if not O.K. |
|---|---|---|
| The flashing lights function properly | | |
| The SMV Sign is clean and visible | | |
| The tires are in good condition with proper pressure | | |
| The wheel lug bolts are tight | | |
| The tractor brakes are in good condition | | |
| The steering linkage is in good condition | | |
| There are no visible oil leaks | | |
| The hydraulic controls function properly | | |
| The ROPS or ROPS Cab is in good condition | | |
| The seatbelt is in place and in good condition | | |
| The 3-point hitch is in good condition | | |
| The drawbar pins are securely in place | | |
| The PTO master shield is in place | | |
| The engine oil level is full | | |
| The brake fluid level is full | | |
| The power steering fluid level is full | | |
| The fuel level is adequate | | |
| The engine coolant fluid level is full | | |
| The radiator is free of debris | | |
| The air filter is in good condition | | |

Operator's Signature:_____

**DO NOT OPERATE an UNSAFE TRACTOR or IMPLEMENT**



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# OPERATION

## 9. DRIVING THE TRACTOR AND IMPLEMENT

Safe tractor transport requires the operator possess a thorough knowledge of the model being operated and precautions to take while driving with an attached implement. Ensure the tractor has the capacity to handle the weight of the implement and the tractor operating controls are set for safe transport. To ensure safety while driving the tractor with an attached implement, review the following. *OPS-U- 0012*

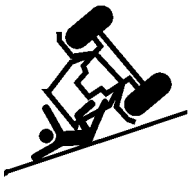
**⚠ DANGER** This Implement may be wider than the Tractor. Be careful when operating or transporting this equipment to prevent the Implement from running into or striking sign posts, guard rails, concrete abutments or other solid objects. Such an impact could cause the Implement and Tractor to pivot violently resulting in loss of steering control, serious injury, or even death. Never allow the Implement to contact obstacles. (S3PT-12)

**⚠ WARNING** Transport only at speeds where you can maintain control of the equipment. Serious accidents and injuries can result from operating this equipment at high speeds. Understand the Tractor and Implement and how it handles before transporting on streets and highways. Make sure the Tractor steering and brakes are in good condition and operate properly.

Before transporting the Tractor and Implement, determine the proper transport speeds for you and the equipment. Make sure you abide by the following rules:

Test the tractor at a slow speed and increase the speed slowly. Apply the Brakes smoothly to determine the stopping characteristics of the Tractor and Implement. As you increase the speed of the Tractor the stopping distance increases. Determine the maximum transport speed not to exceed 20 mph (30 kph) for transporting this equipment.

Test the equipment at a slow speed in turns. Increase the speed through the turn only after you determine that the equipment can be operated at a higher speed. Use extreme care and reduce your speed when turning sharply to prevent the tractor and implement from turning over. Determine the maximum turning speed for you and this equipment before operating on roads or uneven ground.



Only transport the Tractor and Implement at the speeds which allow you to properly control the equipment.

Be aware of the operating conditions. Do not operate the Tractor with weak or faulty brakes or worn tires. When operating down a hill or on wet or rain slick roads, the braking distance increases: use extreme care and reduce your speed. When operating in traffic always use the Tractor's flashing warning lights and reduce your speed. Be aware of traffic around you and watch out for the other guy. (SG-19)



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## 9.1 Starting the Tractor

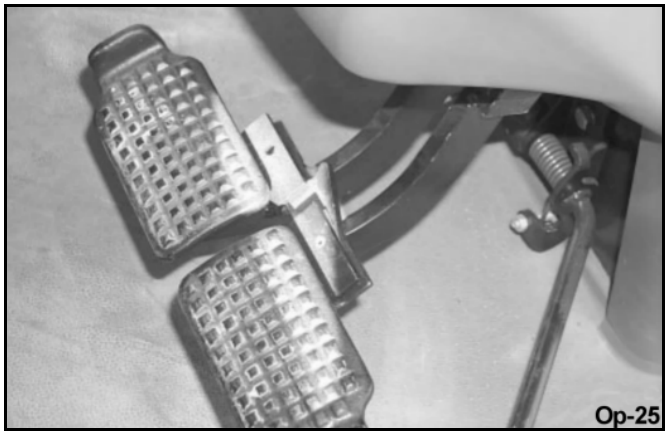
The procedure to start the tractor is model specific. Refer to the tractor operator's manual for starting procedures for your particular tractor. Consult an authorized dealer if the starting procedure is unclear. Ensure the 3-point control lever is in the lowered position and the PTO is disengaged before starting the tractor. *OPS-U-0033*

Op-24

## 9.2 Brake and Differential Lock Setting

Make sure the tractor brakes are in good operating condition. Tractor brakes can be set to operate independently allowing single rear wheel braking action or locked together to provide simultaneous rear wheel braking. FOR MOST DRIVING AND OPERATING CONDITIONS, THE BRAKE PEDALS SHOULD BE LOCKED TOGETHER TO PROVIDE THE MOST EFFECTIVE BRAKING ACTION.

Always disengage the tractor differential lock when turning. When engaged the differential lock will prevent or limit the tractor from turning. During normal cutting conditions, locking the differential provides no benefit and should not be used. *OPS-U- 0013*


Op-25

**⚠WARNING** Be aware of the operating conditions. Do not operate the Tractor with weak or faulty brakes. When operating down a hill or on wet or rain slick roads, the braking distance increases; use extreme care and reduce your speed in these conditions. When operating in traffic, always use the Tractor's flashing warning lights and reduce your speed. Be aware of traffic around you and watch out for the other guy.



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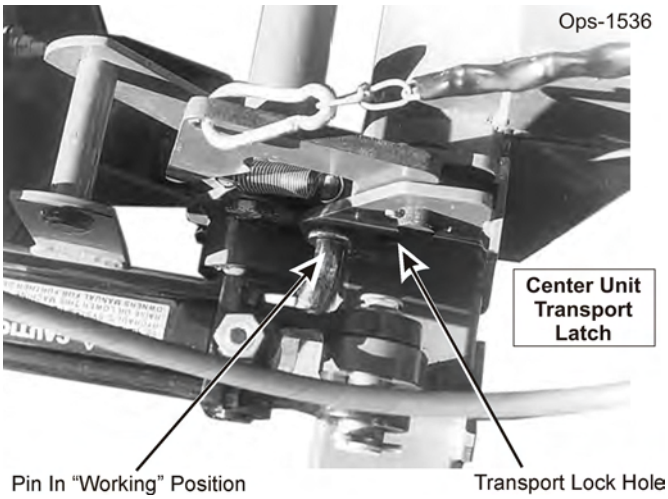
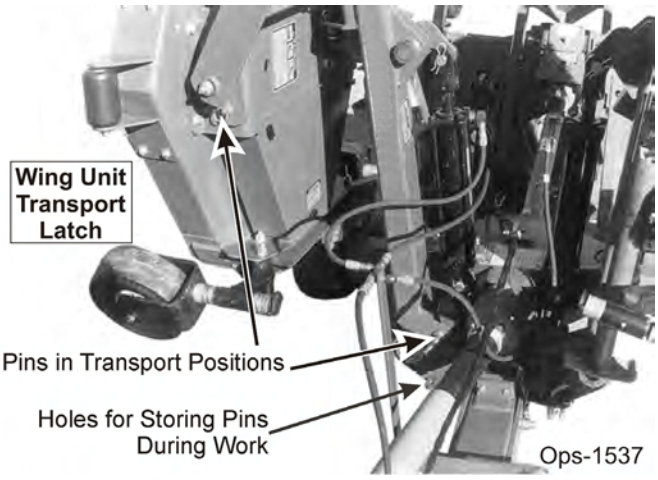
## 9.3 Raising the Mower

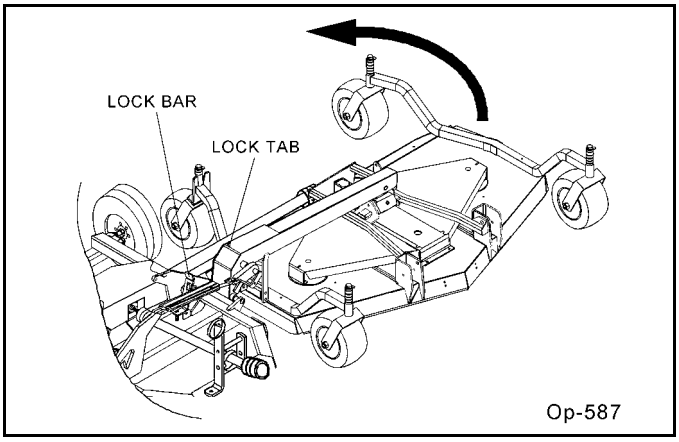
To raise mower for transport, drive the unit to a level area, pull the chain to open the transport locks and retract the hydraulic cylinders. DO NOT raise wings with the mower positioned on an embankment or other inclined position to prevent overturning the mower. DO NOT raise the mower until all blade movement has come to a complete stop. After each section is fully raised, release the chain to engage the transport wing & center locks. Ensure transport locks have engaged on each section to prevent unexpected falling.

The mower's center of gravity is raised and the mower more prone to tipping when the wings are in the raised position. Use extreme caution when towing the mower in the transport position and avoid uneven terrain which could upset the mower. *OPS-R-0016_H*




1. Raise wings and center section to full height.
2. Make certain that lock tab engages into lock bar.



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## 9.4 Operating Position

To lower the mower, retract the hydraulic cylinders to remove tension from the transport locks. Then pull the release chain and place the hydraulic control lever in the float detent to lower the mower.

The mower must be operated with the cutter sections fully lowered and the hydraulic control lever in the float detent to ensure the mower follows the contour of the ground and to prevent sections from creeping up. NEVER attempt to raise the mower while the mower is operating. *OPS-R-0017_H*



## 9.5 Driving the Tractor and Mower

Start off by operating at a slow speed and gradually increase your speed while maintaining complete control of the tractor and mower. Moving slowly at first will also prevent the tractor from rearing up and loss of steering control. The tractor should never be operated at speeds that cannot be safely handled or which will prevent the operator from stopping quickly during an emergency. If the power steering or engine ceases operating, stop the tractor immediately as the tractor will be difficult to control.

Drive the tractor with the 3-Point lift arms in the raised position and lock the control lever in the transport detent position to prevent damage to the mower driveline and tongue while turning.

Perform turns with the tractor and mower at slow speeds to determine how the tractor with an attached mower handles a turn. Determine the speed to maintain proper control of the tractor when making turns. When turning with a towed implement, the overall working length of the unit is increased. Allow additional clearance for the mower when turning.

To avoid overturns, drive the tractor with care and at safe speeds, especially when operating over rough ground, crossing ditches or slopes, and turning corners. Tractor wheel tread spacing should be increased when working on inclines or rough ground to reduce the possibility of tipping.

Use extreme caution when operating on steep slopes. Keep the tractor in a low gear when going downhill. DO NOT coast or free-wheel downhill. *OPS-R-0019_C*



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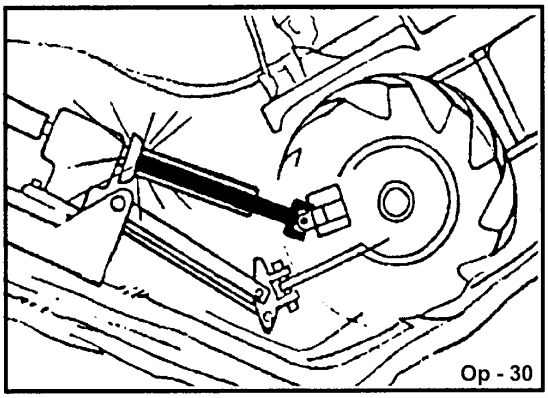
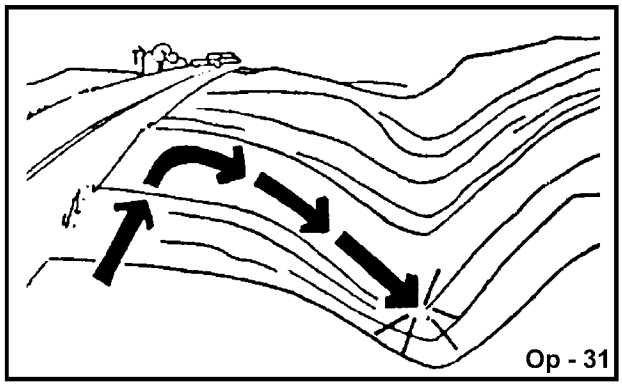
## 9.6 Crossing Ditches and Steep Inclines

When crossing ditches with steep banks or going up sharp inclines, it is possible that the main driveline inner profile will penetrate into the outer housing to its maximum depth until the assembly becomes solid (driveline is at its extreme shortest length). This type of abusive operation can cause serious damage to the tractor and mower drive by pushing the PTO into the tractor and through the support bearings or downward onto the PTO shaft, breaking it off.




**⚠WARNING** Damage resulting from over-collapse of the driveline's inner profile and its outer housing may allow the driveline to come loose from the Tractor which could cause bodily injury to the operator or bystanders and/or extensive damage to the Tractor or Implement. *OPS-R-0020*

When confronted with an incline or ditch, do not approach from an angle which is perpendicular or straight on as damage to or over-collapse of the driveline may occur. *OPS-R-0021_A*




**INCORRECT: DO NOT approach ditch straight on**



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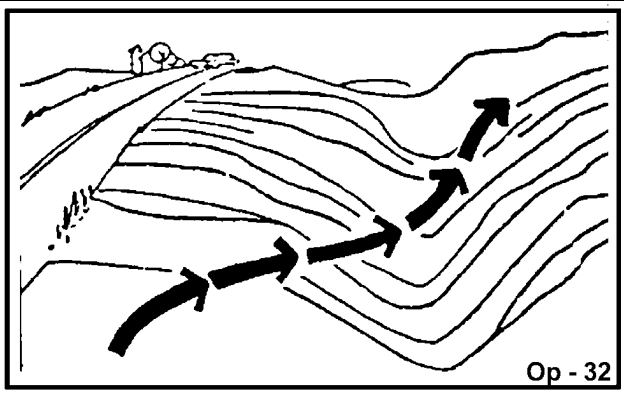
Inclines and ditches should be approached along a line which is at an angle as shown. This type of path will reduce the possibility of over-collapse of the driveline and resulting damage. If the gradient is so steep that such an approach increases the possibility of a tractor roll-over, select an alternate crossing path.

When operating the tractor and mower across slopes and inclines, through ditches, and other uneven terrain conditions, it is important to maintain sufficient deck to ground clearance. Blade contact with the ground may cause soil, rocks and other debris to be thrown out from under the mower resulting in possible injury and/or property damage. Ground contact also produces a severe shock load on the mower drive and to the mower blades resulting in possible damage and premature wear. *OPS-R-0022*



CORRECT: Approach ditch at an angle

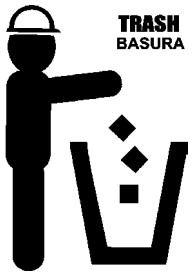


## 10. OPERATING THE TRACTOR AND IMPLEMENT

**THE OPERATOR MUST COMPLETELY UNDERSTAND HOW TO OPERATE THE TRACTOR AND IMPLEMENT AND ALL CONTROLS BEFORE ATTEMPTING TO OPERATE.** The operator must read and understand the Safety and Operation Sections of the implement and tractor operator's manuals. These manuals must be read and explained to any operator who cannot read. Never allow someone to operate the implement and tractor without complete operating instructions.

Before starting any operation, the operator must become familiar with the area to be worked in and any obstacles and hazards contained within to ensure safety to the operator, bystanders, and equipment. Special attention should be paid to foreign debris, rough terrain, steep slopes, and passersby and animals in the area. *OPS-U- 0015*

**⚠WARNING** Extreme care should be taken when operating near loose objects such as gravel, rocks, wire, and other debris. Inspect the area before mowing. Foreign objects should be removed from the site to prevent machine damage and/or bodily injury or even death. Any objects that cannot be removed must be clearly marked and carefully avoided by the operator. Stop mowing immediately if blades strike a foreign object. Repair all damage and make certain rotor or blade carrier is balanced before resuming mowing. (SGM-05)



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**⚠WARNING** Many varied objects, such as wire, cable, rope, or chains, can become entangled in the operating parts of the mower head. These items could then swing outside the housing at greater velocities than the blades. Such a situation is extremely hazardous and could result in serious injury or even death. Inspect the cutting area for such objects before mowing. Remove any like object from the site. Never allow the cutting blades to contact such items. (SGM-06)



## 10.1 Foreign Debris Hazards

Before mowing, inspect the area to make sure there are no foreign objects that the mower blades could hit or become entangled with. Remove all foreign objects and debris. If objects are too big to remove, mark them clearly and be sure to prevent the mower blades from contacting them.

If you hit a solid object or foreign debris, stop the mower and tractor at once. Immediately idle the engine speed and disengage the PTO. Wait for all mower rotating motion to stop, then raise the mower and move the tractor and implement off the object. Inspect the area and remove, or mark the location of the debris. Inspect the condition of the mower and make any needed repairs immediately. Make sure the blades are not damaged and the carrier is balanced before resuming operation.

Always wear your seat belt securely fastened and only operate the tractor and mower with the ROPS in the raised position. If the tractor or mower hits a tree stump, rock, or bump, a sudden movement could throw you off of the seat and under the tractor and/or mower. The seat belt is your best protection from falling off the tractor and the ROPS provides protection from being crushed during a tractor roll-over. *OPS-R-0023_B*



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## 10.2 Bystander/Passerby Precautions

If a bystander comes within 100 yards of the tractor while the mower is being operated, stop the tractor at once, idle the engine and disengage the PTO. Do not engage the PTO again until all bystanders are well past the 100 yard distance.

**⚠ DANGER** Rotary Mowers are capable under adverse conditions of throwing objects for great distances (300 ft (100 m) or more) and causing serious injury or death. Follow safety messages carefully.

**STOP MOWING IF PASSERSBY ARE WITHIN 300 Feet (100 m) UNLESS:**

-Front and Rear Deflectors, Chain Guards, or Bands are installed and in good, workable condition;

-Mower sections or Wings are running close to and parallel to the ground without exposed Blades;

-Passersby are outside the existing thrown-object zone;

-All areas have been thoroughly inspected and all foreign material such as rocks, cans, glass, and general debris has been removed.

***NOTE:*** *Where there are grass and weeds high enough to hide debris that could be struck by the blades, the area should be: inspected and large debris removed, mowed at an intermediate height, inspected, closely with any remaining debris being removed, and mowed again at desired final height. (This will also reduce power required to mow, reduce wear and tear on the Mower drivetrain, spread cut material better, reduce streaking, and make the final cut more uniform).* (SRM-01)

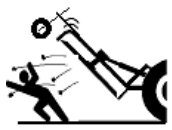


## 10.3 Engaging the Power Take Off (PTO)

Before engaging the PTO, make certain that the area is clear of bystanders and passersby. The implement must be completely lowered and the deck positioned at a safe operating height. NEVER engage the PTO with the implement in the raised position.

Set the tractor engine speed at approximately 1,000 RPM before engaging the PTO. Shift the PTO control to the on position, and slowly increase the engine speed until the PTO is operating at the rated speed. If you hear unusual noises or see or feel abnormal vibrations, disengage the PTO immediately. Inspect the implement to determine the cause of the noise or vibration and repair the abnormality. *OPS-U- 0027*

**⚠ WARNING** Do not let the Blades turn when the Mower Deck is raised for any reason, including clearance or for turning. Raising the Mower deck exposes the Cutting Blades which creates a potentially serious hazard and could cause serious injury or even death from objects thrown from the Blades. (SRM-07)





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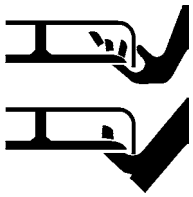
# OPERATION

**WARNING** Do not put hands or feet under mower decks. Blade Contact can result in serious injury or even death. Stay away until all motion has stopped and the decks are securely blocked up. (SGM-09)



## 10.4 PTO RPM and Ground Speed

Ground speed for mowing will depend upon the height, type, and density of vegetation to be cut. Recommended speed for efficient mower performance is between 2 and 5 mph(3-8 kph). Operate the mower at its full rated PTO speed to maintain blade speed for a clean cut. Refer to the tractor operator's manual or the tractor instrument panel for the engine speed and gear to provide the required PTO and desired ground speed. Make sure that the mower is operating at its full rated speed before entering the vegetation to be cut. If it becomes necessary to temporarily regulate engine speed, increase or decrease the throttle gradually.

Ground speed is achieved by transmission gear selection and not by the engine operating speed. The operator may be required to experiment with several gear range combinations to determine the best gear and range which provides the most ideal performance from the mower and most efficient tractor operation. As the severity of cutting conditions increase, the ground speed should be decreased by selecting a lower gear to maintain the proper operating PTO speed. *OPS-R-0025*

**WARNING** Do not exceed the rated PTO speed for the Implement. Excessive PTO speeds can cause Implement driveline or blade failures resulting in serious injury or death. (SG-26)

## 10.5 Operating the Mower

Only operate the mower from the tractor operator's seat with the seatbelt securely fastened on a ROPS or cab equipped tractor. The mower is designed for cutting grass and small weeds. Sharp blades will produce a cleaner cut and require less power. Travel at a speed that allows the mower sufficient time to cut through the vegetation and maintain the PTO operating speed to prevent overloading the mower and tractor. Choose a driving pattern that provides the maximum pass length and minimizes turning. Stay alert and watch for trees, low hanging limbs, power lines, and other overhead obstacles and solid ground objects while you are operating.

Under some conditions, tractor tires may roll vegetation down preventing a cut at the same height as the surrounding area. To minimize this problem, reduce the tractor ground speed while maintaining the operating speed of the mower. A slower ground speed allows grasses to partially rebound and be cut. Reversing the direction of travel may also help produce a cleaner cut in these conditions.

Avoid mowing in the reverse direction. If the mower must be backed to access an area to cut, make sure there are no persons or other foreign debris behind the mower before mowing in reverse. When mowing in reverse, operate the tractor and mower at a reduced ground speed to ensure control of the tractor and mower is maintained.



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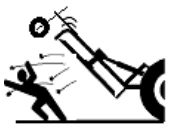
**WARNING** Do not mow with two machines in the same area except with Cab tractors with the windows closed. (SGM-11)

**WARNING** Mow only in conditions where you have clear visibility in daylight or with adequate artificial lighting. Never mow in darkness or foggy conditions where you cannot clearly see at least 300 feet (90 m) in front and to the sides of the tractor and mower. Make sure that you can clearly see and identify passersby, steep slopes, ditches, drop-offs, overhead obstructions, power lines, debris and foreign objects. If you are unable to clearly see these type of items discontinue mowing. (SGM-1)

**WARNING** Avoid mowing in reverse direction when possible. Check to make sure there are no persons behind the mower and use extreme care when maneuvering in reverse. Mow only at a slow ground speed where you can safely operate and control the tractor and mower. Never mow an area that you have not inspected and removed debris or foreign material. (SGM-08)

**WARNING** Do not let the Blades turn when the Mower Deck is raised for any reason, including clearance or for turning. Raising the Mower deck exposes the Cutting Blades which creates a potentially serious hazard and could cause serious injury or even death from objects thrown from the Blades. (SRM-07)



**WARNING** Follow these guidelines to reduce the risk of equipment and grass fires while operating, servicing, and repairing the Mower and Tractor:

-Equip the Tractor with a fire extinguisher in an accessible location.

-Do Not operate the Mower on a Tractor with an under-frame exhaust.

-Do Not smoke or have an open flame near the Mower and Tractor.

-Do Not drive into burning debris or freshly burnt areas.

-Never allow clippings or debris to collect near drivelines, or gearboxes. Periodically shut down the Tractor and Mower and clean clippings and collected debris from the mower deck.



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Large, dense, or wet vegetation may need to be mowed in two or more passes to achieve a uniform cut. In such conditions, raise the cutting height to 12” or more on the first pass. *OPS-R-0043*

Then lower the mower to the desired height and mow the vegetation a second time. If possible, select a mowing pattern that is at a 90 degree angle to the first pass to reduce streaking for a more uniform cut. *OPS-R-0044_A*

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## 10.6 Shutting Down the Implement

To shut down attached mower head, first bring the tractor to a complete stop. Decrease engine RPM to idle then disengage cutterhead. The mower head will come to a complete stop within a suitable amount of time. Do not engage or disengage the cutterheads at a high RPM unless there is an emergency situation.

Park the tractor on a level surface, place the transmission in park or neutral and apply the parking brake, lower the attached implement to the ground, shut down the engine, remove the key, and wait for all motion to come to a complete stop before exiting the tractor. *OPS-U- 0016*

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## 11. DISCONNECTING THE MOWER FROM THE TRACTOR

**⚠ DANGER** Always shut the Tractor completely down, place the transmission in park, and set the parking brake before you or anyone else attempts to connect or disconnect the Implement and Tractor hitches. (S3PT-15)

**⚠ WARNING** Never unhitch without using the Tongue Jack. The Tongue is very heavy. Attempting to lift the Tongue without using the Tongue Jack could cause strains or other injury. Allowing the tongue to fall suddenly and unexpectedly could result in crushing injury. Use the Tongue Jack for lifting the Implement only. Overloading the Tongue Jack can cause failure with possible serious bodily injury or even death. (STI-04)

Before disconnecting the mower, the PTO must be disengaged and all motion at a complete stop. Move the mower to a level storage location and lower the center section and both wings to the ground. If the mower will be stored with the sections in the raised position, be sure that the locks are engaged. If the mower is not resting securely on the ground, block the mower up securely before attempting to disconnect it from the tractor. Use extreme care to keep feet and hands from under the mower and clear of any pinch points.

When disconnecting the mower, the tractor should be completely shut down and secured in position. Relieve hydraulic pressure by moving the control levers back and forth several times. Lower the parking jack and raise the mower until the tongue clevis is no longer resting on the tractor drawbar and is supported solely by the jack. Also, make sure that the jack foot is securely resting at ground level or securely supported by a block before raising the mower. Once the mower tongue is being supported entirely by the jack, remove the hitch bolt, locknut and washers. Disconnect the hydraulic hose from the tractor and secure to the mower to prevent contact with the ground.

After disconnecting the mower hitch, remove the mower driveline from the tractor PTO shaft. Place the driveline in its storage bracket to prevent it from contacting mud or dirt which can contaminate the universal joint bearings and shorten the life of the driveline. After the driveline has been disconnected from the tractor place the PTO master shield back in the operating position.



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## 12. MOWER STORAGE

It is recommended that the mower be stored with the center section and both wings fully lowered to ground level. If the mower is stored with the wings in the raised position, select a level area and install wing transport braces to prevent the wings from falling BEFORE disconnecting the mower hitch from the tractor.

Properly preparing and storing the mower at the end of the season is critical to maintaining its appearance and to help ensure years of dependable service. The following are suggested storage procedures:

- Thoroughly clean all debris off the mower to prevent damage from rotting grass and standing water.
- Lubricate all mower grease points and fill gearbox oil levels as detailed in the maintenance section.
- Tighten all bolts and pins to the recommended torque.
- Check the mower for worn and damaged parts. Perform repairs and make replacements immediately so that the mower will be ready for use at the start of the next season.
- Store the mower in a clean, dry place with the mower housing resting securely on blocks or at ground level.
- Keep the driveline yoke from sitting in water, dirt and other contaminants.
- Use spray touch-up enamel where necessary to prevent rust and maintain the appearance of the mower.

**⚠ DANGER** Never allow children to play on or around Tractor or Implement. Children can slip or fall off the Equipment and be injured or killed. Inadvertent contact with controls can cause the Implement to shift or fall crushing themselves or others. (SG-25)



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# OPERATION

## 13. TRANSPORTING THE TRACTOR AND IMPLEMENT

Inherent hazards of operating the tractor and implement and the possibility of accidents are not left behind when you finish working in an area. Therefore, the operator must employ good judgement and safe operation practices when transporting the tractor and implement between locations. By using good judgement and following safe transport procedures, the possibility of accidents while moving between locations can be substantially minimized. *OPS-U- 0017*



**⚠ DANGER** Never allow children or other persons to ride on the Tractor or Implement. Falling off can result in serious injury or death. (SG-10)

Before transporting the tractor and mower, idle the tractor engine, disengage the PTO and wait for all mower moving parts to come to a complete stop. Raise the mower sections and ensure transport locks engage. *OPS-R-0083_A*

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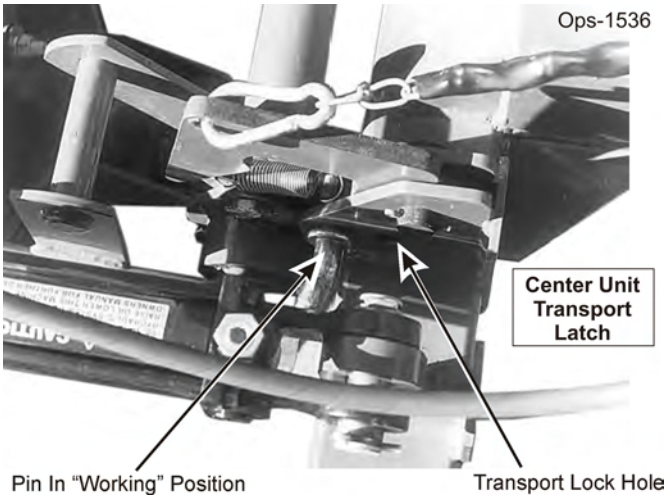
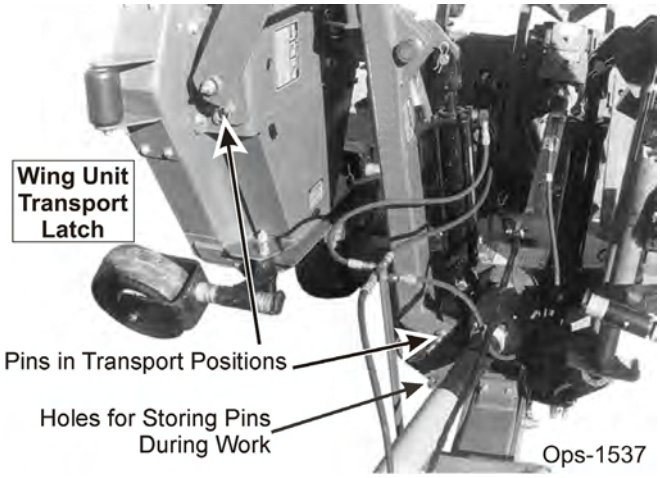
To raise mower for transport, drive the unit to a level area, pull the chain to open the transport locks and retract the hydraulic cylinders. DO NOT raise wings with the mower positioned on an embankment or other inclined position to prevent overturning the mower. DO NOT raise the mower until all blade movement has come to a complete stop. After each section is fully raised, release the chain to engage the transport wing & center locks. Ensure transport locks have engaged on each section to prevent unexpected falling.

Install pins into the transport lock positions.

***NOTE:*** *The mower deck transport locking pins provided on the wing sections MUST be removed BEFORE operation. Failure to remove these locking pins will result in front caster wheel damage, turf damage, and unacceptable mowing performance.*

The mower's center of gravity is raised and the mower is more prone to tipping when the wings are in the raised position. Use extreme caution when towing the mower in the transport position and avoid uneven terrain which could upset the mower. *OPS-R-0016_I*





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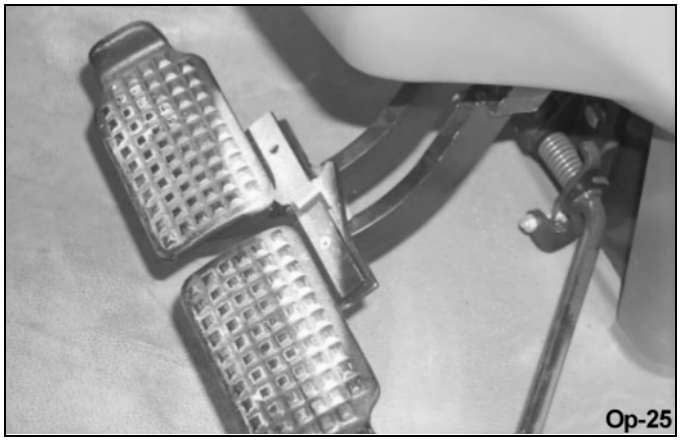
Before transporting the tractor on a public roadway or boarding a trailer for transport, the tractor brake pedals should be locked together. Locking the pedals ensures that both wheels brake simultaneously while stopping, especially when making an emergency stop.

Use extreme caution and avoid hard applications of the tractor brakes when towing heavy loads at road speeds. Never tow the implement at speeds greater than 20 MPH (32 kph). *OPS-U- 0018*




If the tractor's hydraulic pump is not independent of the tractor PTO, or if the tractor PTO has to be run to have hydraulic power, disconnect the mower driveline from the tractor PTO output shaft. Secure the driveline to the mower deck to prevent driveline damage or loss during transport.

## 13.1 Transporting on Public Roadways

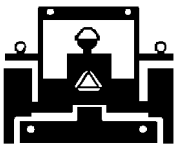
Extreme caution should be used when transporting the tractor and implement on public roadways. The tractor must be equipped with all required safety warning features including a SMV emblem and flashing warning lights to alert drivers of the tractor's presence. Remember that roadways are primarily designed for automotive drivers and most drivers will not be looking out for you, therefore, you must look out for them. Check your side view mirrors frequently and remember that vehicles will approach quickly because of the tractor's slower speed. Be extremely cautious when the piece of equipment that you are towing is wider than the tractor tire width and/or extends beyond your lane of the road.

Make sure that a proper size safety tow chain is secured between the tractor and implement before entering a public road. *OPS-U- 0019*

**⚠WARNING** Only tow the Implement behind a properly sized and equipped Tractor which exceeds the weight of the Implement by at least 20%. DO NOT tow the Implement behind a truck or other type of vehicle. Never tow the Implement and another Implement connected in tandem. Never tow the Implement at speeds over 20 MPH. (STI-06)

**⚠ DANGER** Never allow children or other persons to ride on the Tractor or Implement. Falling off can result in serious injury or death. (SG-10)

**⚠WARNING** Make certain that the "Slow Moving Vehicle" (SMV) sign is installed in such a way as to be clearly visible and legible. When transporting the Equipment use the Tractor flashing warning lights and follow all local traffic regulations. (SG-6)





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The SMV (Slow-Moving Vehicle) emblem is universal symbol used to alert drivers of the presence of equipment traveling on roadways at a slow speed. SMV signs are a triangular bright orange with reflective red trim for both easy day and night visibility. Make sure the SMV sign is clean and visible from the rear of the unit before transporting the tractor and implement on a public roadway. Replace the SMV emblem if faded, damaged, or no longer reflective. *OPS-U- 0020*

Make sure that all tractor flashing warning lights, headlights, and brake/tail lights are functioning properly before proceeding onto public roads. While newer model tractors have plenty of lighting to provide warning signals and operating lighting, most older models are only equipped with operating lights. Consult an authorized tractor dealer for lighting kits and modifications available to upgrade the lighting on older tractor models. *OPS-U- 0021*

When operating on public roads, have consideration for other road users. Pull to the side of the road occasionally to allow all following traffic to pass. Do not exceed the legal speed limit set in your country for agricultural tractors. Always stay alert when transporting the tractor and implement on public roads. Use caution and reduce speed if other vehicles or pedestrians are in the area. *OPS-U- 0022*

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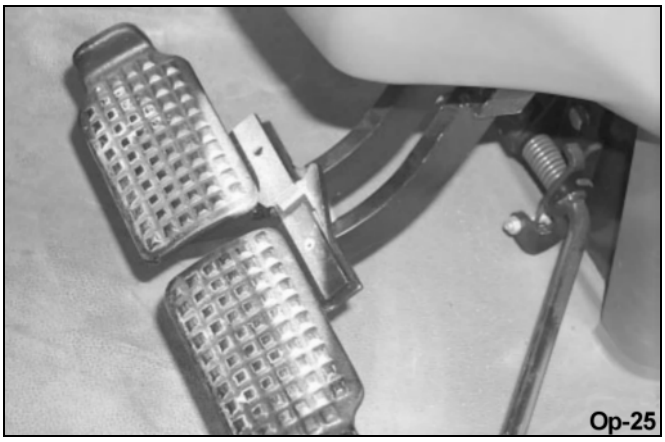
Reduce speed before turning or applying the brakes. Ensure that both brake pedals are locked together when operating on public roads. *OPS-U- 0023*




## 13.2 Hauling the Tractor and Implement

Before transporting a loaded tractor and implement, measure the height and width dimensions and gross weight of the complete loaded unit. Ensure that the load will be in compliance with the legal limits set for the areas that will be traveled through. *OPS-U- 0024*

Use adequately sized and rated trailers and equipment to transport the tractor and implement. Consult an authorized dealer to determine the proper equipment required. Using adequately sized chains, heavy duty straps, cables and/or binders, securely tie down both the front and rear of the tractor utilizing the proper tie down locations as specified by the tractor manufacturer. *OPS-U- 0025*

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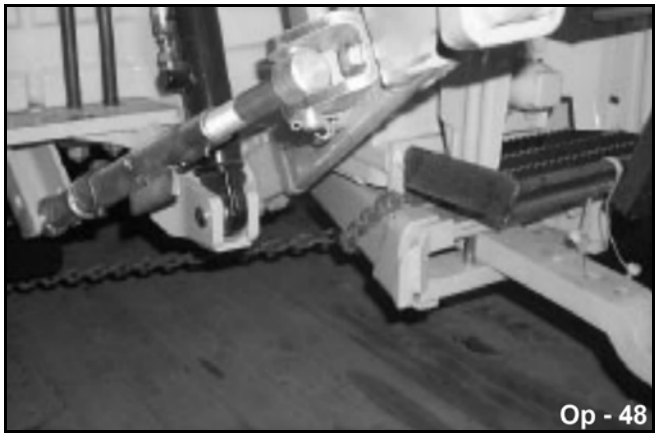
Arrange the chains so that when tightened, the chains are pulling downward and against themselves. Carefully tighten the securing chains or other fasteners using boomers or binders to apply maximum tension. Use extreme care when attaching and removing the securing devices as the extreme tension involved when released has the potential to inflict serious injury.

While hauling the tractor and implement, make occasional stops to check that the tractor and implement have not moved or shifted and that the securing chains have maintained tension. If during transport a hard braking, sharp turning, or swerving action was performed, stop at the next safe location to inspect the security of the load. *OPS-U- 0026*





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## 14. TROUBLESHOOTING GUIDE

| PROBLEM | POSSIBLE CAUSE | POSSIBLE REMEDY |
|---|---|---|
| Streaking or Windrowing | Slow Blade Speed | Operate PTO at 540 RPM. |
| | Worn Blade Tips | Replace with Genuine BUSH HOG blades. |
| | Dull Blades | Sharpen blades uniformly. |
| | Blades unable to cut that part of grass pressed down by path of tractor tires or casters | Slow ground speed of tractor but keep engine running at full PTO RPM. Cutting slower will help. |
| | Mowing too fast | Slow down until cured. |
| | Drive belt loose | Tighten per Instructions. |
| | Belt glazed/slipping | Apply belt dressing or replace with special BUSH HOG belt. |
| | Blade loose on Spindle. | Tighten blade bolt securely. (***Note:*** *Torque to 76 ft./lbs.)* |
| | Conditions too wet for mowing | Allow grass to dry before mowing. |
| Uneven Cut | Cutter not level side to side or front to rear | Adjust cutting height. |
| | Belt slipping | Adjust belt. |
| | Worn or bent blade(s). | Replace blade(s). |
| Heavy Vibration | Too high blade speed | Do not exceed 540 PTO RPM. |
| | Broken/bent Blade | Replace with genuine BUSH HOG blades. |
| | Worn/Unbalanced Blade | Grind uniformly, rebalance and replace |
| | Bent/broken Sheave | Replace parts. |
| | Trash Hung on Blade | Clean off Blade. |
| Frayed Edges on Belt Cover | Belt misaligned or belt rubbing guide | Re-align belt or guide. Be sure belt doesn't rub any other part while running. |
| | Pulley misalignment | Inspect to ensure belt is running in center of backside idler. Shim idler as necessary to align. |



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| PROBLEM | POSSIBLE CAUSE | POSSIBLE REMEDY |
|---|---|---|
| Belt Slipping | Belt loose | Tighten or replace with Special BUSH HOG belt. |
| | Belt Glazed | Use belt dressing or replace. |
| | Oil on Belt | Clean or replace. |
| | Mower overloading, material too tall or heavy | Reduce tractor ground speed but maintain full PTO rpm. Cut material twice, one high pass and then mow at desired height. Cut a partial swath. |
| | Oil on belt from over lubricating | Be careful not to over lubricate. Clean lubricant from belt and pulleys with a clean rag. Replace oil soaked belt. |
| | Belt hung up or rubbing | Check belt for free travel in pulleys and belt guides. Check under mower and around blade spindle shafts for wire, rags or other foreign material. Clean all material from under mower. |
| Belt Rollover | Pulley misalignment | Re-align |
| | Damaged belt | Replace belt |
| | Foreign object in pulley grooves | Inspect all pulley grooves for rust, paint or weld spots and remove. |
| | Worn pulley groove | Replace pulley |
| Damaged Belt | Rollover, high shock loads or installation damage | Replace belt. |
| Belt Breakage | High shock loads | Avoid abusive mowing. Avoid hitting the ground or large obstructions. |
| | Belt came off drive | Check drive alignment for foreign material in grooves. Ensure proper tension. Avoid hitting solid objects or ground. |
| Noisy Cutter | Loose components. | Check all bolts for tightness. |
| | Low oil in gearbox. | Check oil |

*Check belt for damage by laying it flat on floor. If belt does not lie flat (has lumps or twists), which indicates broken or stretched cords, it must be replaced.



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# MAINTENANCE SECTION



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# MAINTENANCE

## PARTS INFORMATION

PARTS INFORMATION

Bush Hog mowers use balanced and matched system components for blade carriers, blades, cuttershafts, knives, knife hangers, rollers, drivetrain components, and bearings. These parts are made and tested to Bush Hog specifications. Non-genuine "will fit" parts do not consistently meet these specifications. The use of “will fit” parts may reduce mower performance, void warranties, and present a safety hazard. Use genuine Bush Hog mower parts for economy and safety. (SPBH-1)

**SEE YOUR BUSH HOG DEALER**

Before operating your Cutter, make sure it is properly lubricated and thoroughly inspected. Only a minimum of time and effort is required to regularly lubricate and maintain this machine to provide long life and trouble free operation.

**WARNING** Always disengage the PTO before raising the Rotary Cutter for transporting or making adjustments.

***NOTE:*** *Some guards and shields have been removed from the illustrations and pictures for instructional clarity.* ***DO NOT*** *operate implement without all shields and guards in place and in good condition.*

## Lubrication

Do not let excess grease collect on or around parts, particularly when operating in sandy areas. The illustrations show lubrication points. The chart gives the frequency of lubrication in hours, based on normal operating conditions. Severe or unusual conditions may require more frequent lubrication.

Use Multi-Purpose Gear Oil (EP80W-90) when required in Gearbox. Use N.L.G.I #2 grease for all locations designated with grease gun. Be sure to clean the fitting thoroughly before using grease gun. Failure to maintain proper lubrication will result in damage to U-joints, gearbox, and/or driveshaft. **Figure Mnt-R-0536**



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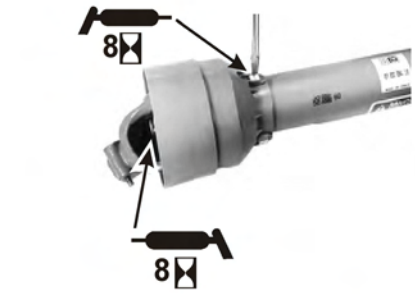
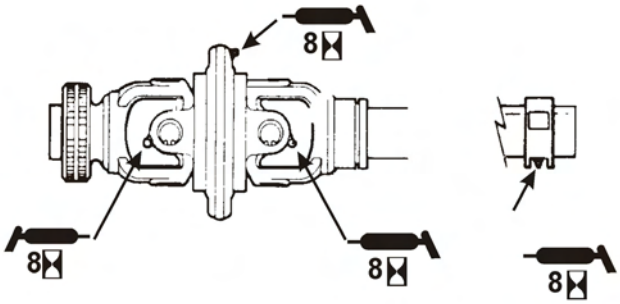
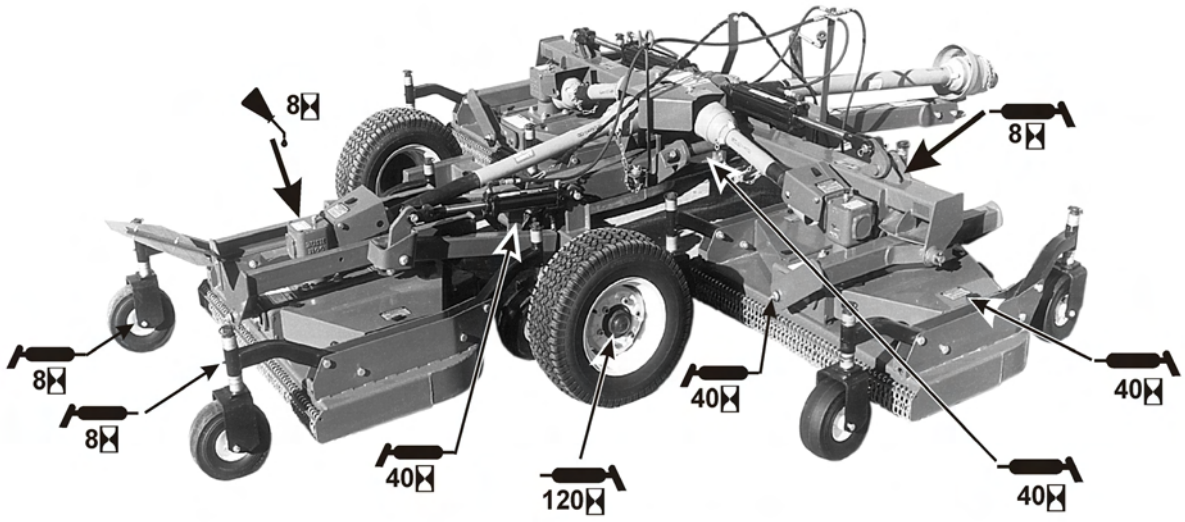
# Mower Grease & Oil Points




| | |
|---|---|
| **Driveline** | |
| Input Driveline | 8 Hours |
| Main Telescoping Tube | 8 Hours |
| Wing Telescoping Tube | 8 Hours |
| Shield Bearings | 8 Hours |
| **Gearbox** | |
| Left Gearbox | 8 Hours |
| Right Gearbox | 8 Hours |
| Divider Gearbox | 8 Hours |
| **Tailwheel** | |
| Wheel Hubs | 120 Hours |
| Axle Pivot | 8 Hours |
| **Miscellaneous** | |
| Cylinder Rod Lugs | 40 Hours |
| Deck Pivot | 40 Hours |
| Wing Pivot | 40 Hours |
| Spindle Assembly | 40 Hours |



Mnt-R-0536



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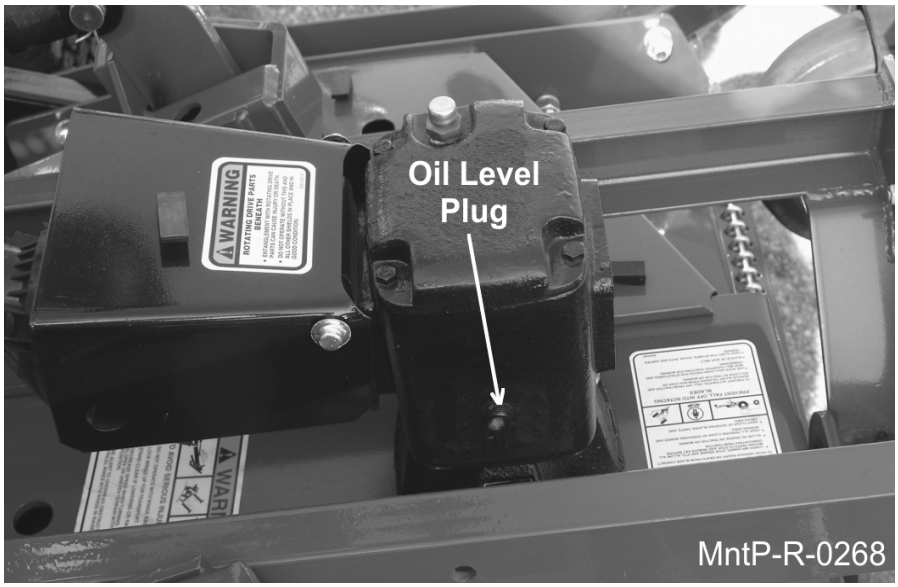
## GEARBOX

The Gearbox has been filled with lubricant to the Test Plug Level prior to shipment. However, you should check the oil level at Test Plug before operating, and frequently thereafter.
The gearbox should not require additional lubricant unless the box is cracked or a seal is leaking. It is recommended that the oil level plug be removed after every 8 to 10 hours of operation and oil added until it comes to proper level at oil level plug opening. **MntP-R-0268.**




Required lubricant is Multi-Purpose Gear Oil (EP85W-140). Gearbox capacity is 1 Quart.

***NOTE:*** *Overfilling the Gearbox will cause pressure to build up and cause Oil Seals to leak.*

***ATTENTION:*** *If the Gearbox suddenly starts making an unusual noise, stop at once, check for leaks, and refill Gearbox as required.*



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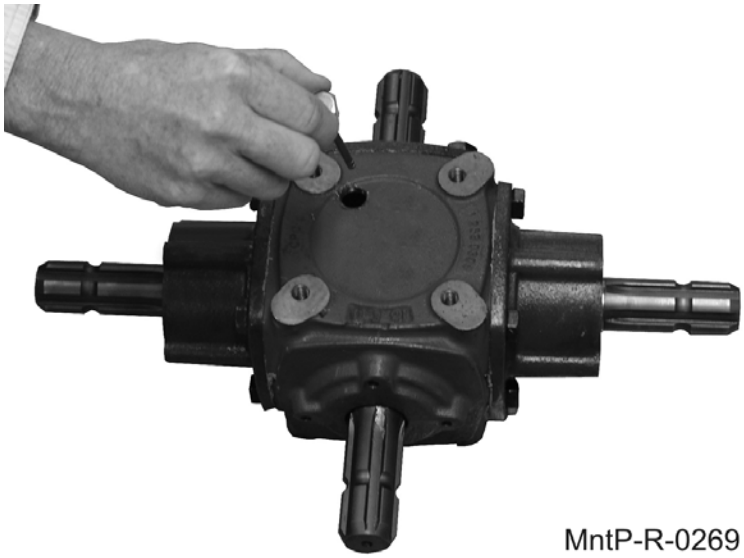
## CENTER 4-WAY GEAR BOX

Gearbox is filled from factory with proper lube level. To check oil level, remove dipstick plug located on the top of the gearbox. It is recommended that the oil level be checked every 100 hours of operation. Add oil as needed, until it reaches the top mark on the dipstick.



MntP-R-0269

Recommended lubricant is Multi-Purpose Gear Oil (EP85W-140). Gearbox capacity is 1-1/2 quarts.

## SWIVEL ASSEMBLY

The Swivel Assembly should be lubricated every 40 hours.

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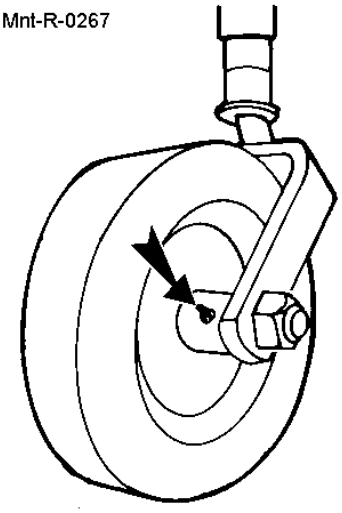
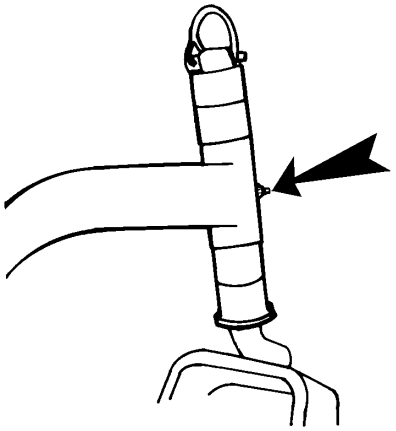
## GAUGE WHEEL ASSEMBLIES

Gauge wheels are equipped with bushings which require grease daily. Grease fittings are provided in the Wheel Hub and Gauge Wheel Pivot. Grease after 8 hours of use.

Mnt-R-0267



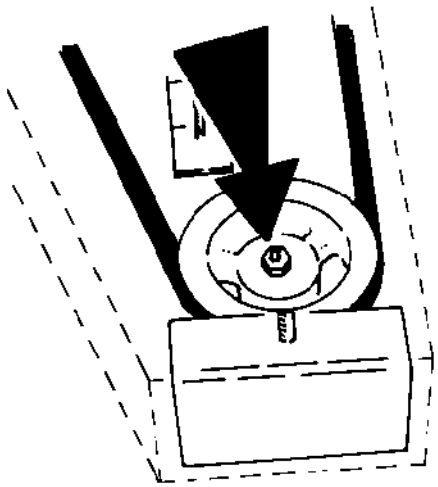


Mnt-R-0268

## BLADE SPINDLE LUBRICATION

Blade spindles must be lubricated (every 40 hrs). Access lubrication fitting through hole in outer shields and in center gearbox mounting. Each spindle must be lubricated enough each time to force small amount of grease out through top seal.

***NOTE:*** *Do not overlube as excess grease may get on belt drive.*



Mnt-R-0269



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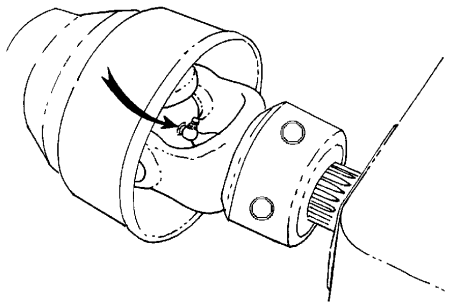
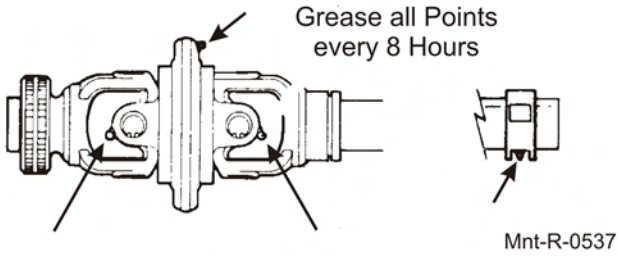
## DRIVELINE LUBRICATION

The Drivelines and U-Joints should be inspected each morning before the mower is started. **Mnt-R-0537.** The U-Joint and CV Joint on the Driveline undergo extreme forces when the unit is turning or when the Wings are being raised. It is important that the U-Joints and CV Joint be greased each day before the unit is started, and after each 8 hours of use. The U-Joints are located at each end of the Center and Wing Drivelines. The CV Joint assemblies are accessible by rotating the Driveline Safety Shield until the hole in the Shield matches up with the Grease Fitting. Use #2 Bearing Grease for lubrication. Do not force grease through the Needle Cup Assemblies. Inspect the U-Joint for wear by holding the shaft on one side of the U-Joint while trying to rotate the shaft on the other side of the U-Joint. If there is noticeable movement in the Driveline replace the U-Joint before it causes severe damage to the Driveline.

**Important** Grease all Points Every 8 Hours



Mnt-0024




Mnt-R-0537

The Driveline Integral Shields should not become dented or otherwise damaged. The Integral Shield Assembly has a Nylon Bearing at each end and should turn freely. This nylon bearing should require lubrication every 8 hours. To remove the Integral Shields for replacement or repair, turn the three Nylon Nuts 1/4 turn in the Shield Slots of the Cone and Tube and remove them. Slip the Shield Cone Assembly off inner section of the Driveline. Install the new or repaired Shield on the Driveline. Place the split Nylon Bearing over the Driveline Housing of Shaft against the Yoke and in the Bearing groove. Install shield over the Housing so the Nylon Bearing fits into the Shield Bearing Retainer. Align a slot in the Shield Cone with one of the slots in the Shield.



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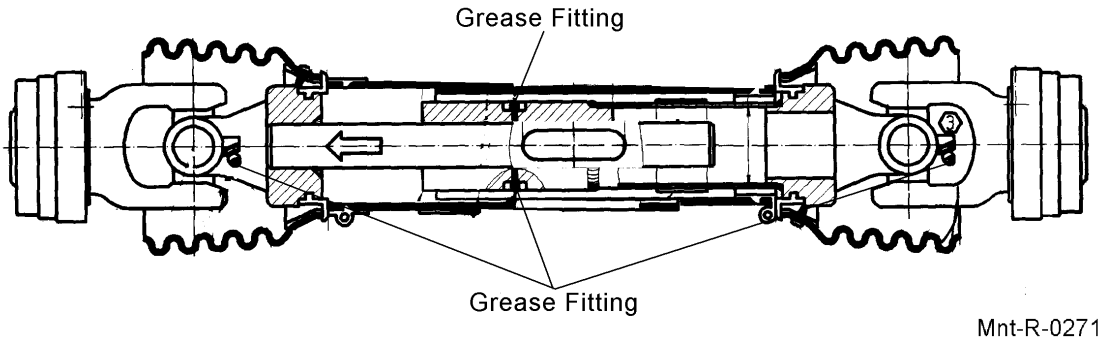
## CV DRIVELINE PROFILE LUBRICATION

Grease telescoping profile tube through slots in shield tubes.

***NOTE:*** *Constant Velocity (CV) Joint - Position CV joint as straight as possible to be sure grease will penetrate to ball joint. Lubricate the central body with a minimum of 30 shots of grease every 8 hours. Lubricate telescoping members with 10 shots every 8 hours and every 40 hours pull the two sections apart, apply thin coat of multi-purpose grease to outside of inner (male) section and reassemble.*




Mnt-R-0271

## WING DRIVELINE PROFILE LUBRICATION

Disconnect PTO driveline, pull the two sections apart, apply thin coat of multi-purpose grease to outside of inner (male) section. Reassemble sections and install. Pull each section to be sure driveline and shields are securely connected. Make certain PTO shielding is in good condition.

**⚠ CAUTION** Make certain that the Driveline Integral Shields are free to telescope and rotate around the Driveline without binding.

**⚠WARNING** When attaching PTO yoke to tractor PTO shaft, it is important that spring-activated locking collar slides freely and locking balls are seated in groove on PTO shaft. A loose shaft could slip off and result in personal injury or damage to cutter.



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## BLADE SERVICING

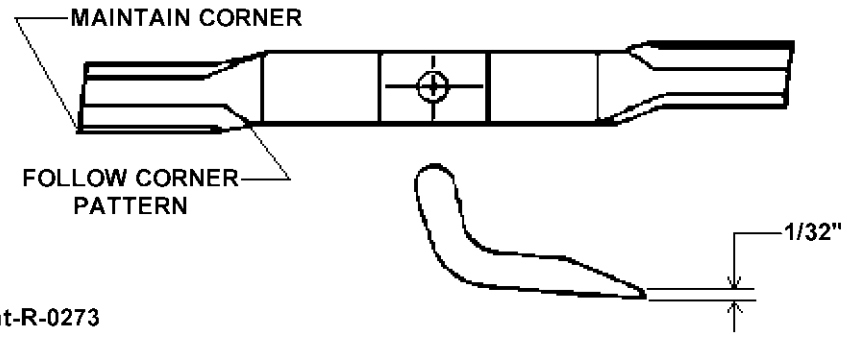
Inspect blades before each use to determine that they are properly installed and in good condition. Replace any blade that is bent, excessively nicked, worn, or has any other damage. Small nicks can be ground out when sharpening.

Use only original equipment blades on this cutter. They are made of special heat-treated alloy steel. Substitute blades may not meet specifications and may fail in a hazardous manner that could cause injury.

## BLADE SHARPENING

Always sharpen both blades at same time to maintain balance. Follow original sharpening pattern as shown in **Figure Mnt-R-0008** Always sharpen blades by grinding. DO NOT heat and pound out edge. Do not sharpen blade to a razor edge, but leave a 1/16" blunt edge. Do not sharpen back side of blade. **Mnt-R-0273.**

**WARNING** Avoid personal injury. Always block the cutter up to prevent if from falling when the blades and/or carrier are being serviced.




Mnt-R-0273

**Important** When sharpening blades, grind each end the same amount to maintain balance. Unbalanced blades will cause excessive vibration which can damage blade spindle bearings. Vibration may also cause structural cracks in mower housing.



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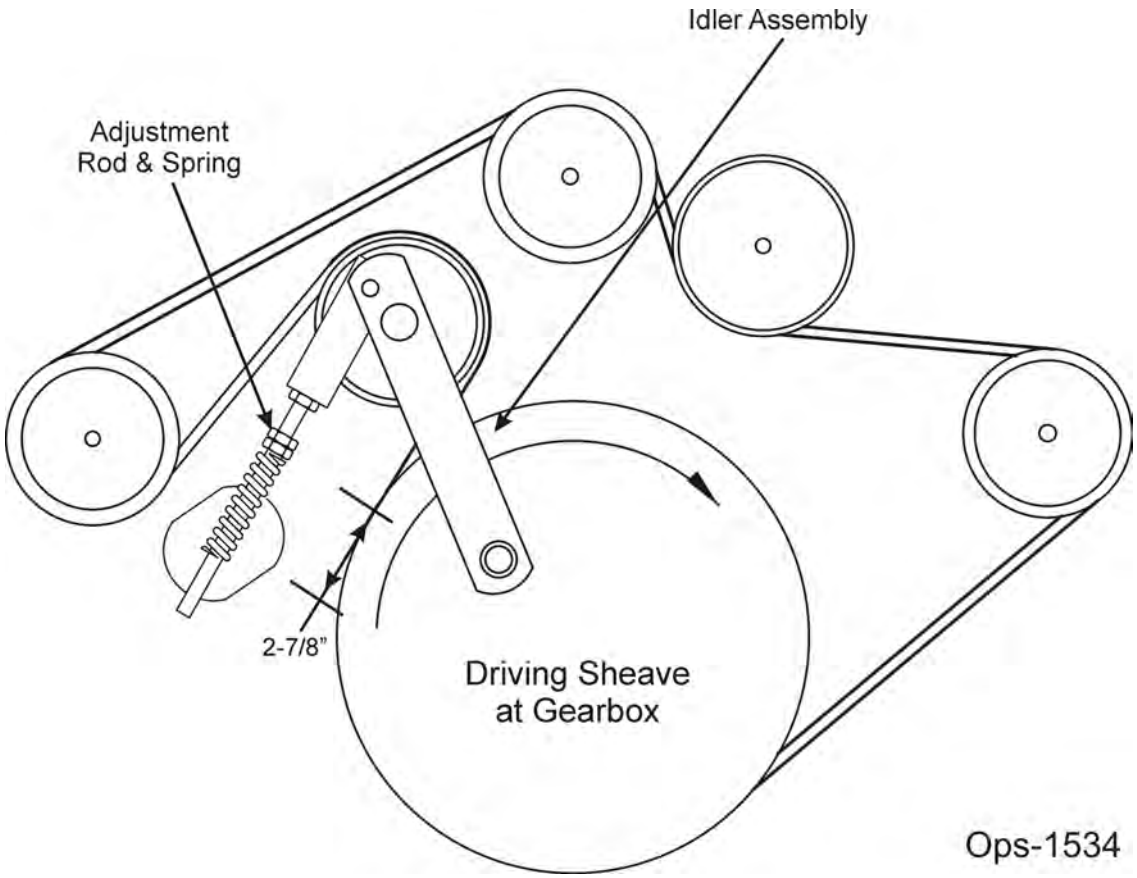
## BLADE INSTALLATION

Install washer on blade bolt, insert bolt into blade, thread bolt into spindle shaft.
***NOTE:*** *Tighten blade bolt to 76 ft /lbs. torque. Use heavy leather gloves during tightening process to hold blade and wrench.*

## SPINDLE BELT ADJUSTMENT

Belt tensions should be checked every 40 hours to get maximum life from drive belts and best performance from the cutter. Belt tension is adjusted by increasing or decreasing the length of the spring on the moveable idlers. For proper belt tension on the mover, the spring lengths should be set at 2-7/8". To adjust the spring length, loosen or tighten the 1/2" hex nuts on the spring adjustment rod until the correct spring length is reached.



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## SPINDLE BELT REPLACEMENT

1. Flip up black latches and remove right and left side shields. To remove the outside shields on the wing cutter decks, the wings must be in the folded position.
2. Relieve spring tension by loosening the two 1/2” hex nuts on each spring adjustment rod.
3. Remove old belt.
4. Install new belt as shown below. (Also refer to the decal on underside of belt shield)
5. Disconnect the adjustment rod from the idler assembly.
6. Place belt into the groove on the driving sheave.
7. Work the belt over the other sheaves.
8. Connect the adjustment rod and the idler assembly.
9. Tighten the compression springs on the drive to 2-7/8” long. Tighten the jam nut on the adjustment rod.
10. Replace all shields before operating machine.

## STORAGE

Your rotary mower represents an investment from which you should get the greatest possible benefit. Therefore, when the season is over, the cutter should be thoroughly checked and prepared for storage so that a minimum amount of work will be required to put it back into operation for the next season. The following are suggested storage procedures:

1. Thoroughly clean the cutter.
2. Lubricate the cutter as covered in Maintenance Section.
3. Tighten all bolts and pins to the recommended torque.
4. Check the cutter for worn or damaged parts. Make replacements immediately.
5. Store the cutter in a clean, dry place with the cutter housing resting on blocks.
6. Use spray touch-up enamel where necessary to prevent rust and maintain the appearance of the cutter.



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## PROPER TORQUE FOR FASTENERS

The chart lists the correct tightening torque for fasteners. When bolts are to be tightened or replaced, refer to this chart to determine the grade of bolts and the proper torque except when specific torque values are assigned in manual text.

RECOMMENDED TORQUE IN FOOT POUNDS UNLESS OTHERWISE STATED IN THE MANUAL.

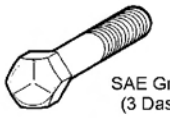
***NOTE:*** *These values apply to fasteners as received from supplier, dry or when lubricated with normal engine oil. They do not apply if special graphited or molydisulphide greases or other extreme pressure lubricants are used. This applies to both UNF fine and UNC coarse threads.*

### TORQUE SPECIFICATIONS - DRY TORQUE

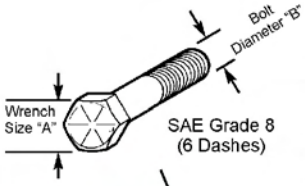
**AMERICAN**

Bolt Head Markings

SAE Grade 2
(No Dashes)



SAE Grade 5
(3 Dashes)



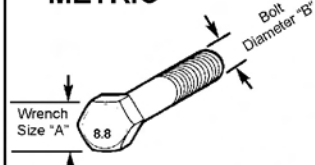

SAE Grade 8
(6 Dashes)

All Capscrews
SAE Grade 8

Proper torque for American fasteners.
Recommended Torque in Foot Pounds (Newton Meters).*

| WRENCH SIZE (IN.) "A" | BOLT DIAMETER (IN.) "B" AND THREAD SIZE | SAE GRADE 2 | SAE GRADE 5 | SAE GRADE 8 |
|---|---|---|---|---|
| 7/16 | 1/4 - 20 UNC | 6 (7) | 8 (11) | 12 (16) |
| 7/16 | 1/4 - 28 UNF | 6 (8) | 10 (13) | 14 (18) |
| 1/2 | 5/16 - 18 UNC | 11 (15) | 17 (23) | 25 (33) |
| 1/2 | 5/16 - 24 UNF | 13 (17) | 19 (26) | 27 (37) |
| 9/16 | 3/8 - 16 UNC | 20 (27) | 31 (42) | 44 (60) |
| 9/16 | 3/8 - 24 UNF | 23 (31) | 35 (47) | 49 (66) |
| 5/8 | 7/16 - 14 UNC | 32 (43) | 49 (66) | 70 (95) |
| 5/8 | 7/16 - 20 UNF | 36 (49) | 55 (75) | 78 (106) |
| 3/4 | 1/2 - 13 UNC | 49 (66) | 76 (103) | 106 (144) |
| 3/4 | 1/2 - 20 UNF | 55 (75) | 85 (115) | 120 (163) |
| 7/8 | 9/16 - 12 UNC | 70 (95) | 109 (148) | 153 (207) |
| 7/8 | 9/16 - 18 UNF | 79 (107) | 122 (165) | 172 (233) |
| 15/16 | 5/8 - 11 UNC | 97 (131) | 150 (203) | 212 (287) |
| 15/16 | 5/8 - 18 UNF | 110 (149) | 170 (230) | 240 (325) |
| 1-1/8 | 3/4 - 10 UNC | 144 (195) | 266 (360) | 376 (509) |
| 1-1/8 | 3/4 - 16 UNF | 192 (260) | 297 (402) | 420 (569) |
| 1-5/16 | 7/8 - 9 UNC | 166 (225) | 430 (583) | 606 (821) |
| 1-5/16 | 7/8 - 14 UNF | 184 (249) | 474 (642) | 668 (905) |
| 1-1/2 | 1 - 8 UNC | 250 (339) | 644 (873) | 909 (1232) |
| 1-1/2 | 1 - 12 UNF | 274 (371) | 705 (955) | 995 (1348) |
| 1-1/2 | 1 - 14 UNF | 280 (379) | 721 (977) | 1019 (1381) |
| 1-11/16 | 1-1/8 - 7 UNC | 354 (480) | 795 (1077) | 1288(1745) |
| 1-11/16 | 1-1/8 - 12 UNF | 397 (538) | 890 (1206) | 1444 (1957) |
| 1-7/8 | 1-1/4 - 7 UNC | 500 (678) | 1120 (1518) | 1817 (2462) |
| 1-7/8 | 1-1/4 - 12 UNF | 553 (749) | 1241 (1682) | 2013 (2728) |
| 2-1/16 | 1-3/8 - 6 UNC | 655 (887) | 1470 (1992) | 2382 (3228) |
| 2-1/16 | 1-3/8 - 12 UNF | 746 (1011) | 1672 (2266) | 2712 (3675) |
| 2-1/4 | 1-1/2 - 6 UNC | 870 (1179) | 1950 (2642) | 3161 (4283) |
| 2-1/4 | 1-1/2 - 12 UNF | 979 (1327) | 2194 (2973) | 3557 (4820) |

**METRIC**




Numbers appearing on bolt heads indicate ASTM class.

Proper torque for Metric fasteners.
Recommended torque in Foot Pounds (Newton Meters).*

| WRENCH SIZE (mm) "A" | BOLT DIA. (mm) "B" | ASTM 4.6 | ASTM 8.8 | ASTM 9.8 | ASTM 10.9 |
|---|---|---|---|---|---|
| 8 | 5 | 1.8 (2.4) | | 5.1 (6.9) | 6.5 (8.8) |
| 10 | 6 | 3 (4) | | 8.7 (12) | 11.1 (15) |
| 13 | 8 | 7.3 (10) | | 21.1 (29) | 27 (37) |
| 16 | 10 | 14.5 (20) | | 42 (57) | 53 (72) |
| 18 | 12 | 25 (34) | 74 (100) | 73 (99) | 93 (126) |
| 21 | 14 | 40 (54) | 118 (160) | 116 (157) | 148 (201) |
| 24 | 16 | 62 (84) | 167 (226) | 181 (245) | 230 (312) |
| 30 | 20 | 122 (165) | 325 (440) | | 449 (608) |
| 33 | 22 | | 443 (600) | | 611 (828) |
| 36 | 24 | 211 (286) | 563 (763) | | 778 (1054) |
| 41 | 27 | | 821 (1112) | | 1138 (1542) |
| 46 | 30 | 418 (566) | 1119 (1516) | | 1547 (2096) |

*Use 75% of the specified torque value for plated fasteners. Use 85% of the specified torque values for lubricated fasteners.

Mnt-B-0005



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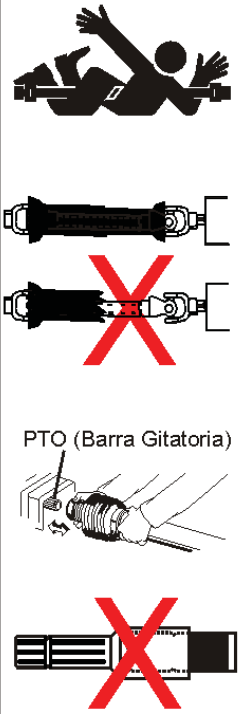
## ⚠ DANGER

**TO AVOID SERIOUS INJURY OR DEATH FROM DRIVELINE CONTACT, DRIVELINE SEPARATION OR PTO STUB SHAFT FAILURE:**

- STOP, LOOK and LISTEN for rotating motion before approaching implement.
- STAY AWAY and KEEP hands, feet and body AWAY from rotating parts until all moving elements have stopped.
- ALWAYS shut off PTO before dismounting.
- DO NOT operate if PTO shields are damaged or missing.
- PUSH AND PULL on yoke until collar clicks and locks yoke in place.
- CHECK driveline guards for free rotation and sufficient overlap to avoid unshielded areas.
- DO NOT USE PTO ADAPTER




## ⚠ PELIGRO

**PARA EVITAR LESION SERIA O MUERTE POR CONTACTO A LA LÍNEA DE CONDUCCIÓN, SEPARACION DE LÍNEA DE CONDUCCIÓN O EL FRACASO DEL EJE DE PTO:**

- PARE, MIRE y ESCUCHE por el movimiento de rotación antes de acercarse al implemento.
- MANTENGASE ALEJADO y MANTENGA manos, pies y cuerpo LEJOS de partes girando, hasta que todos los elementos de movimiento se han parado.
- SIEMPRE apage la Toma De Fuerza (Barra Gitatoria) antes de desmontar.
- NO opere si las cubiertas de Toma De Fuerza (Barra Gitatoria) estan dañadas.
- EMPUJE Y JALE el yugo hasta que el collar de fijación hace clic y el yugo se traba en lugar.
- REVISE las guardias de línea de conducción por giracion libre y sufficiente traslape para evitar areas sin cobertura.
- NO UTILICE UN ADAPTOR PARA LA TOMA DE FUERZA (Barra Gitatoria).

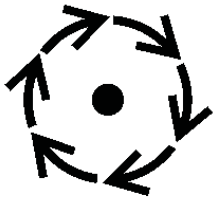
D547_1

## ⚠ WARNING

OPERATE THIS MACHINE AT

**540 RPM**

TRACTOR PTO SPEED ONLY. Overspeeding PTO may cause component failure resulting in bodily injury. TRACTOR PTO ROTATION: CLOCKWISE



## ⚠ ADVERTENCIA

OPERE ESTA MÁQUINA A

**540 RPM**

SOLAMENTE OPERE ESTA MÁQUINA A LA VELOCIDAD DE PTO (TOMA DE FUERZA O BARRA GITATORIA) DEL TRACTOR DE 540 RPM. El sobre exceso de velocidad de PTO puede causar el fracaso de componente que resultara en lesión. ROTACION DE PTO DEL TRACTOR: EN SENTIDO HORARIO D547 SP



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DANGER
CRUSHING HAZARD AND PINCH POINTS
TO AVOID SERIOUS INJURY OR DEATH:
• KEEP AWAY from moving machinery parts that can pinch,
crush or fall.
PELIGRO
RIESGOS DE APLASTAMIENTO Y PUNTOS DE PELLIZCO
PARA EVITAR LESION SERIA O MUERTE:
• MANTENGASE ALEJADO de piezas moviles de la maquina que
pueden peliscar, aplastar o caerse.
D628 SP



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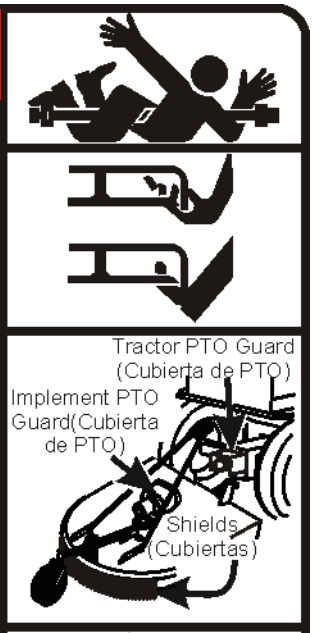
## ⚠ PELIGRO

### RIESGO DE ENREDAMIENTO

**PARA EVITAR LESION SERIA O MUERTE:**

- NO opere sin la cubierta protectora en su lugar y en buen estado. Toma De Fuerza (Barra Gitatoria) y guardias de caja de engranaje son SUJETO AL ESGASTE.
- MANTENGASE ALEJADO y MANTENGA manos, pies y cuerpo LEJOS de las cuchillas girando, líneas de conducción, y partes que siguen moviendose depués de que el poder es apagado. ESPERE hasta que todos los elementos móviles se han parado.
- SIEMPRE REEMPLACE CUBIERTAS que han sido quitadas para servicio o mantenimiento.
- DETENGASE, OBSERVE y ESCUCHE por el movimiento de rotación antes de acercarse al implemento.
- NO PISE EN las líneas de conducción o cubiertas.



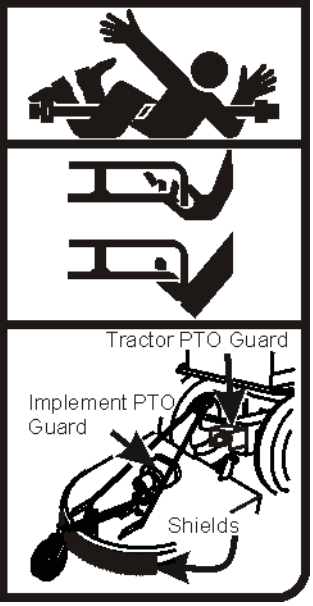

## ⚠ DANGER

### ENTANGLEMENT HAZARD

**TO AVOID SERIOUS INJURY OR DEATH:**

- DO NOT operate without guards in place and in good condition. PTO and gearbox guarding are SUBJECT TO WEAR.
- STAY AWAY and KEEP hands, feet and body AWAY from rotating blades, drivelines and parts that continue to move after power shut-off. WAIT until all moving elements have stopped.
- ALWAYS REPLACE GUARDS that have been removed for service or maintenance.
- STOP, LOOK and LISTEN for rotating motion before approaching implement.
- DO NOT STEP ON drivelines or guards.

D850_2 SP



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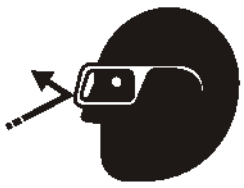
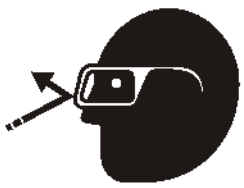
## ⚠ PELIGRO



**PARA EVITAR LESION SERIA O MUERTE:**

- LEA Y ENTIENDA el Manual de Operador proporcionado, signos de seguridad y calcomanias informativas para el tractor y implemento antes de operar el equipo.
- CONTACTE AL DISTRIBUIDOR imediatamente si no tiene los manuales.
- CONTACTE AL DISTRIBUIDOR para que le explique cualquier instrucciónes que no entiende completamente.
- SIEMPRE USE lentes de seguridad.
- USE un casco, zaptos de seguridad y guantes para su protection cuando esta operando el equipo.

## ⚠ DANGER



**TO AVOID SERIOUS INJURY OR DEATH:**

- READ AND UNDERSTAND the provided Operator's Manuals, safety signs and information decals for tractor and implement before operating equipment.
- CONTACT DEALER immediately if you do not have manuals.
- CONTACT DEALER to explain any instructions not fully understood.
- ALWAYS WEAR safety glasses.
- WEAR hard hat, safety shoes and gloves for protection when operating equipment.

D850_1 SP



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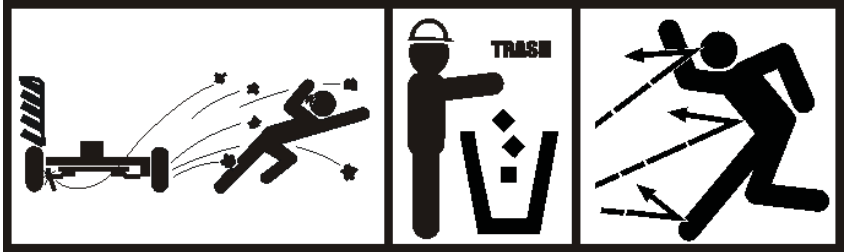
## ⚠ PELIGRO




### RIESGO DE OBJETOS LANZADOS

**Cortacésped puede lanzar objectos hasta 300 pies. PARA EVITAR LESION SERIA O MUERTE a operadores y personas presentes:**

- Pare de segar si personas o traffico se acercan entre 300 pies del area de segar.
- NO OPERE sin la cubierta para objetos lanzados.
- MANTENGA la cubierta para objeto lanzado en su lugar y en buenas condiciones. Los protectores de objetos lanzados son sujetos al desgaste.
- REPARE O REEMPLACE cubiertas si son dañadas, quebradas, o si faltan.
- INSPECCIONE el área por si hay riesgos potenciales de objetos lanzados antes de segar.
- REMUEVA y EVITE objetos come alambre, cable, objetos de metal y todo otro material extranjero.
- NO DEJE que las cuchillas contacten los objectos sólidos como alambre, rocas, postes, borde de banqueta, o barandillas.
- NO OPERE en posicion de transporte o con las alas levantadas.

## ⚠ DANGER

### THROWN OBJECTS HAZARD

**Mower can throw objects up to 300 feet. TO AVOID SERIOUS INJURY OR DEATH to operator or bystanders:**

- STOP mowing if bystanders or traffic come within 300 feet.
- DO NOT OPERATE with thrown object shielding removed.
- KEEP thrown object shielding in place and in good condition during operation. Thrown Objects shielding is subject to wear.
- REPAIR OR REPLACE shielding if damaged, broken or missing. See Operator's Manual for all Shields and Guards.
- INSPECT area for potential mower thrown object hazards before mowing.
- Remove and AVOID objects such as wire, cable, metal objects and all other foreign material.
- DO NOT ALLOW blades to contact solid objects like wire, rocks, posts, curbs or guard rails.
- DO NOT OPERATE in transport position or with wings off ground.

D851_2SP



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## ⚠ PELIGRO

### Riesgo de Atropello Lesión o Muerte

**PARA EVITAR LESION SERIA O MUERTE:**

- SIEMPRE ABROCHE el cinturón de seguridad.
- SOLO ENCIENDA el tractor mientras que esta sentado en el asiento del operador.
- PARE EL MOTOR Y Toma De Fuerza (Barro Gitatoria), aplique el freno de mano, baje el implemento, y deje que todas las partes movil paren completamente, y quite la llave antes de desmontar el tractor.
- ENTIENDA COMO parar el tractor y equipo rapidamente en caso de una emergencia.
- NO MONTE o DESMONTE el tractor en movimiento.
- NUNCA PERMITA pasajeros en el tractor o implemento.
- NUNCA PERMITA que niños operen o se monten en el tractor o implemento.
- MANTENGA LAS PERSONAS PRESENTES LEJOS de la area antes de mover el tractor o implemento.
- MANTENGASE ALERTO y EVITE golpes en troncos, agujeros, pozos o terreno en desnivel.
- EVITE las ramas de árbol, maleza y algun otros objetos que sobresalen que puedan golpear y tumbar el operador del asiento.

## ⚠ DANGER

### Run Over Hazard - Injury or Death

**TO AVOID SERIOUS INJURY OR DEATH:**

- ALWAYS BUCKLE UP seat belt.
- ONLY START Tractor while seated in the operator's seat.
- STOP ENGINE and PTO, engage parking brake, lower implement, allow all moving parts to stop and remove key before dismounting from tractor.
- KNOW HOW to stop tractor and equipment quickly for an emergency.
- DO NOT MOUNT or DISMOUNT Tractor in motion.
- NEVER ALLOW riders on tractor or implement.
- NEVER ALLOW children to operate or ride on tractor or implement.
- KEEP BYSTANDERS CLEAR of area before moving tractor or implement.
- KEEP ALERT and AVOID hitting stumps, holes, ruts, and uneven terrain.
- AVOID tree limbs, brush and other overhanging objects that can strike and throw the operator from seat.

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## ⚠ WARNING

**TO AVOID SERIOUS INJURY OR DEATH FROM HIGH PRESSURE HYDRAULIC OIL LEAKS PENETRATING SKIN:**

- DO NOT OPERATE equipment with oil or fuel leaks.
- KEEP all hydraulic hoses, lines and connections in good condition and tight before applying system pressure.
- Relieve hydraulic pressure before disconnecting lines or working on the system.
- REMOVE and replace hose if you suspect it leaks. Have dealer test it for leaks.

**HIGH PRESSURE FLUID LEAKS CAN BE INVISIBLE. WHEN CHECKING FOR HYDRAULIC LEAKS AND WORKING AROUND HYDRAULIC SYSTEMS:**

- DO NOT use hands to check for leaks.
- ALWAYS WEAR safety glasses and impenetrable gloves.
- USE paper or cardboard to search for leaks.
- KEEP hands and body AWAY from pin holes and nozzles ejecting hydraulic fluid.
- Hydraulic fluid may cause gangrene if not surgically removed immediately by a doctor familiar with this form of injury.

D617

## ⚠ ADVERTENCIA

**PARA EVITAR LESION SERIA O MUERTE POR LA PENETRACION A LA PIEL POR ALTA PRESION DE ACEITE HYDRÁULICO:**

- NO OPERE el equipo con fugus de aceite o combustible.
- MANTENGA todas las mangueras hydráulicas, líneas y conexiones en buenas condiciones y apretadas antes de aplicar presión al sistema.
- Releve la presión hidráulica antes de desconectar las líneas o trabajar en le sistema.
- QUITE y reemplace la manguera si sospecha que hay fuga.

**FUGAS DE ALTA PRESIÓN PUEDEN SER INVISIBLE. AL VERIFICAR POR FUGAS HIDRAULICAS Y TRABAJANDO ALREDEDOR DE SISTEMAS HIDRAULICOS:**

- NO use las manos para verificar si hay agujeros.
- SIEMPRE USE lentes de seguridad y guantes impenetrables.
- USE papel o un cartón para buscar agujeros.
- NO USE las manos o partes del cuerpo para buscar agujeros.
- MANTEGA manos y cuerpo LEJOS de agujeros de alfiler y boquillas que expulsan el liquido hidráulicos.

## ⚠ DANGER

**THROWN OBJECT HAZARD**

**TO AVOID SERIOUS INJURY OR DEATH:**
DO NOT OPERATE if Thrown Object Shielding is damaged or missing.

MAINTAIN Thrown Object Shielding HERE

## ⚠ PELIGRO

**RIESGO DE OBJETOS LANZADOS**

**PARA EVITAR LESION SERIA O MUERTE:**
NO OPERE si la Cubierta de Objetos Lanzados esta dañada o falta.

MANTENGA la Cubierta de Objetos Lanzados AQUI

D614



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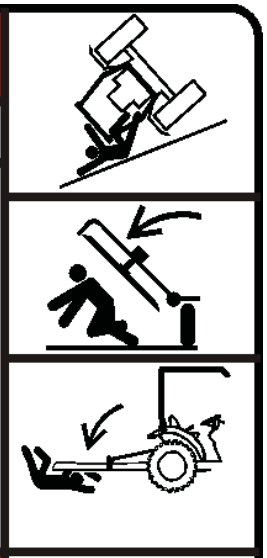
## ⚠ PELIGRO

**Riesgo de Aplastamiento - Lesion o Muerte**

**PARA EVITAR LESION SERIA O MUERTE:**

- USE un tractor equipado con Estructura Protectora Contra Vuelcos ("ROPS") incluyendo barra antivuelco y cinturon de seguridad. Mantenga la barra antivuelco en la posicion elevada.
- PERMANEZCA ALEJADO al quitar el seguro de transporte, y al bajar o subir las alas.
- EL IMPLEMENTO SE PUEDE CAER por el mal funcionamiento hidraulico o operacion accidental de los controles.
- BLOQUEE y soporte con seguridad el equipo antes de poner manos, pies o cuerpo debajo del equipo o componentes levantados.



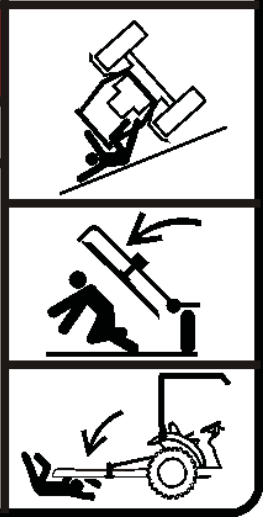
## ⚠ DANGER

**Crushing Hazard - Injury or Death**

**TO AVOID SERIOUS INJURY OR DEATH:**

- USE tractor equipped with Rollover Protective Structure ("ROPS") including roll bar and seat belt. Keep roll bar in raised position.
- STAND CLEAR when removing transport latch, lowering or raising wings.
- IMPLEMENT CAN FALL from hydraulic failure or accidental operation of controls.
- BLOCK UP and securely support equipment before putting hands, feet or body under raised equipment or lifted components.

D852 SP



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## ⚠ PELIGRO

Si no puede leer inglés: antes de poner en funcionamiento este equipo, solicite que alguien le traduzca los mensajes de seguridad o vaya al sitio web para consultar los mensajes de seguridad y las etiquetas ya traducidos.

**El Manual del Operador** **Seguridad vídeo**

www.algqr.com/bis www.algqr.com/bvs

## ⚠ DANGER

Si vous ne savez pas lire le français: avant d'utiliser l'équipement, demandez à une personne de vous traduire les messages de sécurité ou allez sur le site Internet pour voir la traduction des autocollants et des messages de sécurité.

**Manuel de l'Opérateur**

www.algqr.com/bif

## ⚠ PERIGO

Caso você não leia inglês: antes de operar o equipamento, peça para alguém traduzir as mensagens de segurança ou visite a web e obtenha tais mensagens ou os decalques traduzidos.

**Manual do Operador**

www.algqr.com/bip

## ⚠ GEFAHR

Falls Sie Deutsch nicht lesen können: Lassen Sie sich, bevor Sie das Gerät in Betrieb nehmen, die Sicherheitshinweise von einer geeigneten Person in Ihre Sprache übersetzen. Oder suchen Sie auf unserer Website nach Übersetzungen von Schilderaufschriften und Sicherheitshinweisen.

**Benutzerhandbuch**

D855 www.algqr.com/big

## ⚠ WARNING

**PINCH POINT HAZARD**

**TO AVOID SERIOUS INJURY:**

- DO NOT OPERATE with Belt Shield removed.

## ⚠ ADVERTENCIA

**RIESGO DE PUNTOS DE PELLIZCO**

**PARA EVITAR LESION SERIA:**

- NO OPERE con la cubierta de correa ausente.

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## ⚠ WARNING

**ENTANGLEMENT HAZARD**

**TO AVOID SERIOUS INJURY OR DEATH FROM LATCH ROPE ENTANGLEMENT WITH DRIVELINES OR WHEELS:**

- DO NOT wrap latch release rope around hand, fingers or any body parts.
- DO NOT allow latch release rope to hang loose.

## ⚠ ADVERTENCIA

**RIESGO DE ENREDAMIENTO**

**PARA EVITAR LESION SERIA OR MUERTE POR EL ENREDAMIENTO DE LA CORREA DE CIERRE CON LA LINEA DE CONDUCCION O RUEDAS:**

- DESACTIVAR PTO ANTES de doblar las alas.
- NO ACTIVE EL PTO mientras las alas estan elevadas.

D754

## ⚠ WARNING

**Non-genuine parts can fail catastrophically.**
**TO AVOID SERIOUS INJURY OR DEATH:**

- ONLY use genuine BUSH HOG replacement parts.
- Non-genuine parts can fail creating hazardous conditions for operator and bystanders.

Contact local dealer or BUSH HOG about repair parts at:

www.algqr.com/bpm

2501 Griffin Ave.,Selma, Al 36701
Customer Service: 800-363-6096.
Email: contactus@bushhog.com

## ⚠ ADVERTENCIA

**Partes que no son auténticas pueden fallar catastróficamente.**
**PARA EVITAR LESION SERIA O MUERTE:**

- Use SOLAMENTE las partes de reemplazo autenticas de BUSH HOG.
- Partes que no son autenticas pueden fallar y causar conidiciones peligrosas para el operador y personas presentes.

Contacte a su distribuidor local o BUSH HOG sobre partes de reparo a:

www.algqr.com/bpm

2501 Griffin Ave.,Selma, Al 36701
Servicio al Cliente: 800-363-6096.
Correo Electronico: contactus@bushhog.com

## IMPORTANT

**BE AWARE**
**BE ALERT**
**BE ALIVE**

**BE TRAINED**
**Before Operating this Mower**

To prevent serious injury to yourself and/or bystanders, be trained in Safe Mowing Practices.

Alamo Group Companies, Alamo Industrial, Bush Hog, M&W, Rhino, Schulte, Tiger and Terrain King as well as AEM and FEMA provide training material that is critical for your Safety and the Safety of others when operating this equipment. Make these Safety Procedures an important part of every workday.

Read and understand the Operator's Manual.
Do not let untrained individuals operate this equipment.
Contact your Dealer, AEM (www.aem.org), FEMA (314-878-2304, www.FarmEquipment.org), or Alamo Group (www.Alamo- Group.com) for information on training material or courses that provide training in Safer Operating Practices for Mowers.

www.algqr.com/bve

## IMPORTANTE

**ESTE CONSCIENTE**
**ESTE ALERTO**
**ESTE VIVO**

**SEA ENTRENADO**
**Antes de Funsionar Cortacésped**

Para prevenir lesiónes graves a usted y/o personas presentes, sea entrendado en la Practica de Segar Seguro.

Companias de Alamo Group, Alamo Industrial, Bush Hog, M&W, Rhino, Schulte y Tiger asi como AEM y FEMA proporcionan material para entrenar que es esencial para su seguridad y la seguridad de otros al operar este equipo. Haga estos procedimientos de seguridad una parte importante de su dia de trabajo.

www.algqr.com/bvs

Lea y entienda el Manual de Operadores.
No permita que personas sin entrenamiento funcionen este equipo.
Contacte a su distribuidor, AEM (www.aem.org), FEMA (314-878-2304, www.FarmEquipment.org), o Alamo Group (www.Alamo-Group.com) para la informacion sobre el material de entrenamiento o cursos que ofrecen el entenamiento de Prácticas de Operación para Cortadoras.

D559 SP



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## Descripción de Calcomanía

### ⚠ WARNING

**TO AVOID SERIOUS INJURY AND DEATH WHEN TOWING EQUIPMENT:**

- DO NOT TOW with trucks or other vehicles.
- ONLY transport with properly sized and equipped tractor. (see Operator's Manual)
- ATTACH implement SAFETY CHAIN to tractor.
- CHECK SMV sign, reflectors and warning lights for visibility behind unit.
- TURN ON tractor flashing warning lights.

**TO AVOID LOSS OF TOWING CONTROL:**

- DO NOT tow at speeds over 20 mph.
- REDUCE SPEED on inclines, in turns and in poor towing conditions.

### ⚠ ADVERTENCIA

**PARA EVITAR LESION SERIA O MUERTE AL REMOLCAR EL EQUIPO:**

- NO REMOLQUE con camion o cualquier otro vehículo.
- SOLO transporte con un tractor bien equipado y de tamaño adecuado (vea el Manual de Operador)
- APILIQUE LA CEDENA DE SEGUIRDAD al tractor.
- VERIFIQUE EL SMV, reflectors, y luces intermitentes de advertencia pueden ser vistos claramente por detras de la unidad.
- PRIENDA las luces intermitentes de advertencia.

**PARA EVITAR PERDIDA DE CONTROL DE REMOLQUE:**

- NO remolque en velocidades arriba de 20 mph.
- REDUZCA LA VELOCIDAD en inclinas, en vueltas y en la pobres condiciones de remolque.

### ⚠ WARNING

**TO AVOID EQUIPMENT AND GRASS FIRES:**

- CLEAR AWAY grass or debris from slip clutches, gearboxes, drivelines and decks.

**TO AVOID FIRE IGNITION:**

- DO NOT ALLOW BLADES TO CONTACT rocks, metal or solid objects.

### ⚠ ADVERTENCIA

**PARA EVITAR INCIENDOS DE EQUIPO Y CÉSPED:**

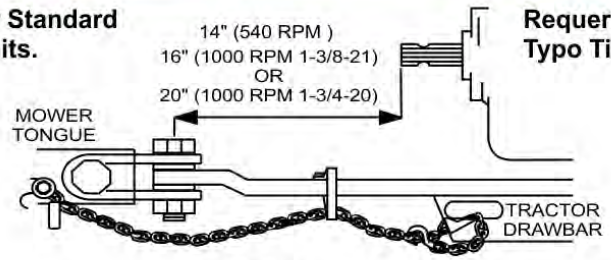
- QUITE el césped o escombros de embrague deslizante, caja de engranajes, líneas de conducción y cubiertas.

**PARA EVITAR INCIENDOS POR IGNICIÓN:**

- NO PERMITA QUE LAS LAMINAS CONTACTEN piedras, metal o objectos solidos.

### IMPORTANT

**Required for Standard Pull Type Units.**




Attach Safety Chain securely.

### IMPORTANTE

**Requerido por Unidades de Typo Tirón Estandar.**

Coloque la Cadena de Seguridad seguramente.

D860





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# SAFETY

## INFORMACIÓN DE PARTES

INFORMACIÓN DE PARTES

Las cortadoras BUSH HOG usan balanciadas y componentes de systema seleccionado para los portadores de cuchillas, cuchillas, eje de cortar, navaja, suspensiones de navajas, los rodillos, los componentes de línea motriz, y cojinetes. Estas partes son echas y probadas a la especificaciones de BUSH HOG. Partes que no son auténticas no regularmente llegan con estas especificaciones. El uso de partes que no son auténticas puede reducir el funcionamiento de la cortadora, anular garantias, y presentar un peligro de seguridad. Use partes de cortadora auténticas de BUSH HOG por economía y seguridad. (SPBH-1 SP)

**CONTACTE A SU DISTRIBUIDOR BUSH HOG**

Manuales de Partes Y Operador

www.algqr.com/bpm

**NOTA:** ***Si necessita un manual completamente en español por favor de ponerse en contacto a; Translations, dirección 1502 E. Walnut Street Seguin, TX 78155; Fax: (830) 372-9529***



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## RIESGOS CON EL MANTENIMIENTO DEL IMPLEMENTO

| | | | | |
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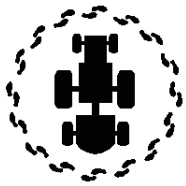
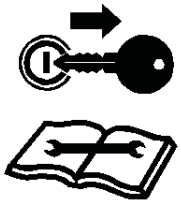
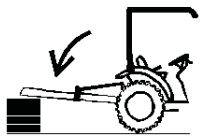
|  |  |  | | |
| Inspeccione periódicamente todas las partes móviles, lubrique las líneas de conducción y ajuste todas las sujeciones. | Apague el motor. Quite la llave antes de realizar tareas de mantenimiento. | Bloquee el implemento antes de repararlo. Utilice bloques grandes sobre suelo blando o húmedo | Coloque las trabas de transporte cilíndricas | Inspeccione las cuchillas para detectar daños o fisuras |

**ADVERTENCIA** **MANTENGA LOS IMPLEMENTOS EN BUENAS CONDICIONES DE FUNCIONAMIENTO, A TRAVÉS DE UN SERVICIO, REPARACIÓN O MANTENIMIENTO APROPIADO.**

**ANTES DE REALIZAR TAREAS DE SERVICIO, REPARACIÓN Y MANTENIMIENTO DEL IMPLEMENTO:**
**ASEGURE EL EQUIPO PARA EL SERVICIO**
**BLOQUE LOS RIESGOS POTENCIALES DE ENERGÍA;piezas giratorias, componentes levantados, presión hidráulica.**

- **APAGUE EL MOTOR Y EL PTO**, coloque el freno de mano, descienda el implemento, espere a que se detengan todas las partes móviles y quite la llave antes de bajarse del tractor.
- **COLOQUE** el implemento sobre el suelo o trabe de manera segura los equipos elevados. Utilice bloques grandes sobre suelo blando o húmedo.
- **CIERRE FIRMEMENTE Y TRABE** las alas del implemento levantado.
- **TRABE LA LENGUA DEL IMPLEMENTO** con bloques grandes y el gato de remolque. NO gateé o trabajar debajo del implemento solo sostenido por el gato de remolque.
- **EMPUJE** y **JALE** la palanca del Cilindro Hidráulico Remoto para l berar la presión hidráulica.
- **DESCONECTE** las mangueras hidráulicas de implemento del tractor.
- **DESCONECTE** la línea de conducción del **IMPLEMENTO** del **EJE DE PTO** del tractor.

**USE GAFAS DE SEGURIDAD y GUANTES PROTECTORES y siga todos los PROCEDIMIENTOS DE SEGURIDAD al realizar tareas de servicio, reparación y mantenimiento sobre el implemento:**

- Siempre **USE GUANTES** protectores al manipular las hojas, cuchillas, bordes filosos o un componente desgastado con bordes filosos.
- Siempre **USE GUANTES** y **GAFAS DE SEGURIDAD** al reparar componentes en caliente
- **EVITE EL CONTACTO** con tanques de aceite hidráulico, bombas, motores, válvulas y superficies de conexión de mangueras calientes.
- **SUJETE FIRMEMENTE** o **TRABE EN POSICIÓN ELEVADA** todos los implementos, bastidores y componentes elevados antes de trabajar sobre los equipos que se encuentran debajo.
- **DETENGA** el movimiento de todos los implementos y **APAGUE EL MOTOR DEL TRACTOR** antes de realizar ninguna tarea.
- **USE** una escalera o gradas elevadas para alcanzar áreas altas del equipo a las que no se pueda acceder desde la tierra.
- **ASEGÚRESE** de estar bien apoyado sobre superficies sólidas planas al subirse al implemento para realizar tareas.
- **SIGA** las instrucciones del fabricante sobre cómo manipular los lubricantes, solventes, limpiadores y otros agentes químicos.
- **NO** cambie ninguna calibración hidráulica de fábrica para evitar fallas de los componentes o equipos.
- **NO** modifique o altere el implemento, las funciones o componentes.
- **NO SUELDE** o repare los componentes de la cortadora. Esto puede causar vibraciones y fallas de los componentes que se desprendan de la cortadora.

**REALICE LAS TAREAS DE SERVICIO, REPARACIÓN, LUBRICACIÓN Y MANTENIMIENTO QUE SE DESCRIBEN EN LA SECCIÓN DE MANTENIMIENTO DEL IMPLEMENTO:**

- **INSPECCIONE** el implemento para detectar sujeciones sueltas, partes gastadas o rotas, ajustes sueltos o con filtraciones, que los pasadores tengan chavetas y arandelas, y las partes móviles para detectar el desgaste.
- **REEMPLACE** todas las partes gastadas o rotas con repuestos autorizados.
- **LUBRIQUE** la unidad tal como se especifica en el cronograma de lubricación.
- **NUNCA** lubrique, ajuste o quite material mientras el equipo está en funcionamiento o movimiento.
- **AJUSTE** todas las tuercas y pernos tal como se especifica.

**INSPECCIÓN DE CUCHILLAS:**

- **REEMPLACE** las cuchillas dobladas, dañadas, agrietadas o rotas inmediatamente por cuchillas nuevas.
- **EVITE** fallas de las cuchillas y que vuelen trozos de cuchillas. NO enderece, suelde o suelde con superficies rígidas.

**INSPECCIÓN DE PROTECTORES DE SEGURIDAD, GUARDAS Y DISPOSITIVOS DE SEGURIDAD:**

- **MANTENGA** en su lugar y en buen estado todos los deflectores, protectores de cadena, protectores de acero, cubiertas de caja de engranajes, cubiertas integrales de PTO, bandas, faldones laterales y zapatas antideslizantes.
- **REEMPLACE** cualquier protector, cubierta o dispositivo de seguridad faltante, roto o gastado.
- El escape del motor, al igual que algunos de sus componentes, y determinados elementos del vehículo contienen o emiten agentes químicos que el estado de California ha determinado que causan cáncer, defectos de nacimiento y otros daños reproductivos.
- Las terminales de baterías y los accesorios relacionados contienen plomo y componentes de plomo, que el estado de California ha determinado son químicos que causan cáncer, defectos de nacimiento u otros daños reproductivos. ***PN HM01 SP***



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# SAFETY

## RIESGOS EN TRANSPORTE

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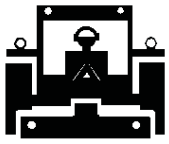
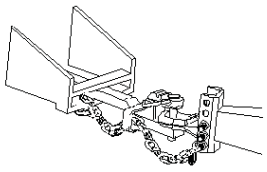
|  | | |  | |
| Use señales de SMV (vehículo de movimiento lento) y balizas | Peligro de detención por pérdida de control | Peligro de velocidad excesiva por pérdida de control | Use la cadena de remolque de seguridad – Tractor a implemento | Coloque las trabas de transporte |

**ADVERTENCIA** **PARA EVITAR LESIONES GRAVES O LA MUERTE AL REMOLCAR O TRANSPORTAR EQUIPOS:**

- **MANTENGA** la velocidad de transporte **POR DEBAJO DE 20** millas por hora para mantener el control del equipo.
- **REDUZCA LA VELOCIDAD** en terreno inclinado, en las curvas y en condiciones de remolque desfavorables.
- **NO REMOLQUE** camiones u otros vehículos
- **USE** un tractor de tamaño adecuado y equipado en función del equipo de remolque.
- **SIGA** todas las reglamentaciones de tránsito locales.

**REQUISITOS DEL TRACTOR PARA REMOLCAR O TRANSPORTAR IMPLEMENTOS:**

- **SÓLO TRANSPORTE** en el tractor con el mecanismo **ROPS** (antivuelco) en posición elevada.
- **USE** un tractor de tamaño adecuado y equipado, que supere el peso del implemento en al menos un 20%
- **MANTENGA EL 20%** del peso del tractor en las ruedas frontales para mantener la dirección en forma segura.

**ANTES DE TRANSPORTAR O REMOLCAR EL IMPLEMENTO:**

**INSPECCIÓN DEL TRACTOR:**

- **VERIFIQUE** la dirección y los frenos para asegurarse el correcto funcionamiento y las condiciones adecuadas.
- **VERIFIQUE LLEVAR EL AVISO DE SMV**, los reflectores y las luces de advertencia para la adecuada operación y visibilidad detrás de la unidad.
- **VERIFIQUE** que no haya impedimentos a la visión mientras conduce, en el tractor, la cabina o el implemento, sentado en el asiento del tractor.
- **AJUSTE** su posición de conducción, los espejos y el transporte del implemento para tener una visión clara para condiciones de conducción y tránsito.

**PREPARE EL IMPLEMENTO PARA EL TRANSPORTE O EL REMOLQUE:**

- **DESAPLIQUE EL PTO**
- **ELEVE LA CORTADORA**
- **QUITE** todo material cortado que se acumule en la plataforma de la cortadora.

**CORTADORA AL REMOLQUE-INSTALE TRABAS DE TRANSPORTE Y CADENA DE SEGURIDAD:**

- **INSTALE los paradores o pernos de transporte en el cilindro de eje central.**
- **AJUSTE LA CADENA DE SEGURIDAD** del implemento al tractor.

**DETERMINAR LAS CARACTERÍSTICAS DE DETENCIÓN DEL TRACTOR Y EL IMPLEMENTO PARA EL TRANSPORTE O REMOLQUE:**

**PRUEBAS DE FRENADO:**

- **FRENE** a velocidades en aumento.
- Observe las distancias de **DETENCIÓN** con el aumento de velocidad.
- **DETERMINE** la velocidad de transporte máxima segura que no supere las 20 millas por hora

**DETERMINE LA VELOCIDAD DE GIRO MÁXIMA ANTES DE OPERAR EN CARRETERAS O TERRENO IRREGULAR:**

- **PONGA A PRUEBA** el equipo aumentando lentamente la velocidad en las curvas para determinar si se puede operar a mayor velocidad.
- **USE MENORES** velocidades de giro en las curvas pronunciadas para evitar el vuelco.

**AL REMOLCAR O TRANSPORTAR EL EQUIPO:**

- Siempre **USE EL CINTURÓN DE SEGURIDAD** al operar o transportar la cortadora.
- **USE** bajas velocidades para evitar el vuelco con el implemento elevado.
- **USE** bajas velocidades y dirección gradual en las curvas, colinas, o en superficies irregulares o poco uniformes, y en carreteras mojadas.
- **ENCIENDA LAS BALIZAS DE ADVERTENCIA** del tractor.
- **TENGA EN CUENTA** el espacio necesario para el vaivén del implemento en las curvas. ***PN TH02 SP***



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## RIESGOS ELÉCTRICOS Y DE FUEGO

| | |
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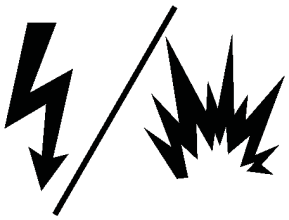
|  | |
| Riesgo de choque y explosión<br>Contacto de paletas con<br>líneas de servicios o gas | No opere cerca de fuego.<br>Mantenga limpia la<br>plataforma de la cortadora |

**⚠ PELIGRO** **PARA EVITAR LESIONES GRAVES O LA MUERTE POR CONTACTO ELÉCTRICO AL TRABAJAR CERCA DE CABLES ELÉCTRICOS, LÍNEAS DE GAS Y DE SERVICIOS:**

- **INSPECCIONE** el área de corte para que no interfiera con cables de alimentación eléctricos subterráneos, obstrucciones, líneas de gas, cables y servicios, estructuras municipales o de otro tipo.
- **MANTENGA** todas las alas elevadas a 3 metros (10 pies) o una mayor distancia de todos los cables de alimentación y obstrucciones elevadas.
- **NO** ponga en contacto la cortadora con ninguna estructura u obstrucción de servicios o municipales.
- **LLAME** AL 811 y al 1-800-258-0808 para identificar cables de servicios subterráneos.

**PAUTAS DE PREVENCIÓN DE INCENDIOS durante la operación, reparación y servicio de la cortadora y el tractor, a fin de reducir el riesgo de incendio del equipo y de la vegetación:**

- El tractor debe estar **EQUIPADO CON MATAFUEGOS**
- **NO OPERE** la cortadora sobre un tractor equipado con escape debajo del bastidor
- **NO FUME** ni acerque fuego directo a la cortadora o el tractor
- **NO CONDUZCA** sobre residuos encendidos o en áreas recientemente quemadas
- **EVITE LA FORMACIÓN DE CHISPAS** al no permitir que la hoja de la cortadora entre en contacto con objetos sólidos como metal o roca.
- **AJUSTE LOS EMBRAGUES DESLIZANTES** para evitar el deslizamiento excesivo y el calentamiento de la placa del embrague.
- **LIMPIE** todo resto de hierba o residuo acumulado alrededor de las líneas de conducción de la cortadora, los embragues deslizantes y cajas de cambios.
- **APAGUE EL MOTOR** al cargar combustible. ***PN EF02 SP***



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# SAFETY

## RIESGO DEL CONTACTO A LAS CUCHILLAS DE CORTADORA

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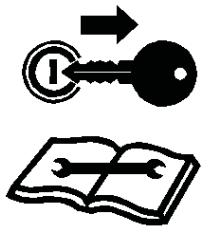
| | |  |
| No ponga los dedos debajo de la cortadora | No ponga el pie debajo de la cortadora | Detenga el tractor. Quite la llave. Lea el Manual |

**⚠ PELIGRO** **MANTÉNGASE LEJOS DE LAS CUCHILLAS GIRATORIAS PARA EVITAR LESIONES GRAVES O LA MUERTE POR CONTACTO CON LA CUCHILLA:**

- **MANTÉNGASE LEJOS** y **NO ACERQUE LAS MANOS, LOS PIES** y **EL CUERPO** a las cuchillas giratorias, líneas de conducción y partes hasta que todos los elementos móviles se hayan detenido.
- **NO** ponga las manos o los pies debajo de las plataformas de la cortadora
- **DETENGA** las **CUCHILLAS** giratorias antes de elevar la plataforma de la cortadora o las alas
- **DETENGA** la cortadora, **EXAMÍNELA** Y **PRESTE ATENCIÓN A LOS SONIDOS** antes de acercarse a la cortadora para asegurarse de que se haya detenido todo el movimiento giratorio. ***PN MB01 SP***

## RIESGO DE FILTRACION DE ACEITE HIDRÁULICO DE ALTA PRESIÓN

| | | |
|---|---|---|
| | | |
| Penetración de aceite de alta presión en la piel | Erosión de la piel por el aceite de alta presión | Usar cartón para detectar filtraciones de aceite |

**⚠ PELIGRO** **PARA EVITAR LESIONES GRAVES O LA MUERTE POR PENETRACIÓN DE FILTRACIONES DE ACEITE HIDRÁULICO DE ALTA PRESIÓN:**

•**NO OPERE** el equipo con filtraciones de aceite o combustible.

- **MANTENGA** todas las mangueras hidráulicas, líneas y conexiones en **BUEN ESTADO** y **AJUSTADAS** antes de aplicar presión al sistema.
- **LIBERE LA PRESIÓN HIDRÁULICA** antes de desconectar las líneas o trabajar en el sistema.
- **QUITE** y reemplace la manguera si sospecha que tiene filtraciones. Solicite al distribuidor que verifique si hay filtraciones.

**LAS FILTRACIONES DE LÍQUIDO DE ALTA PRESIÓN PUEDEN NO SER VISIBLES.**

**AL VERIFICAR FILTRACIONES HIDRÁULICAS Y TRABAJAR CERCA DE LOS SISTEMAS HIDRÁULICOS:**

- **SIEMPRE USE** gafas de seguridad y guantes impenetrables.
- **USE** papel o cartón para verificar si hay filtraciones.
- **NO USE** las manos o partes del cuerpo para detectar filtraciones.
- **MANTENGA** las manos y el cuerpo **LEJOS** de los orificios de clavijas y boquillas de eyección de fluido hidráulico.
- El fluido hidráulico puede causar gangrena si no es extirpado quirúrgicamente de inmediato por un médico especializado en este tipo de lesiones. ***PN HP01 SP***



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## RIESGO DE ENREDO POR EL PTO

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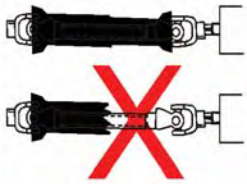
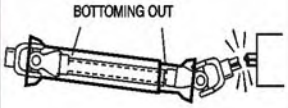
| | |  |  |
| Peligro de enredo No se acerque o toque ningún eje de transmisión de PTO giratorio | Asegúrese de que el eje de PTO esté firmemente sujetado. No use un adaptador de PTO | No opere la máquina si las cubiertas de PTO están dañadas o faltantes | Asegúrese de que los ejes de PTO sean del largo adecuado |

**⚠ PELIGRO** **MANTÉNGASE ALEJADO DE LAS LÍNEAS DE CONDUCCIÓN Y OTROS ELEMENTOS GIRATORIOS PARA EVITAR LESIONES GRAVES O LA MUERTE:**

**MANTÉNGASE LEJOS** y **NO ACERQUE** las manos, los pies y el cuerpo a las cuchillas giratorias, líneas de conducción y partes hasta que todos los elementos móviles se hayan detenido.

- **DETENGA** la cortadora, **EXAMÍNELA Y PRESTE ATENCIÓN A LOS SONIDOS** antes de acercarse a la cortadora para asegurarse de que se haya detenido todo el movimiento giratorio.
- **LOS ELEMENTOS GIRATORIOS SIGUEN ROTANDO** una vez apagada la **PTO**.

**PROTECCIÓN DE LA PTO:**

**PARA EVITAR LESIONES GRAVES O LA MUERTE POR ENREDO AL OPERAR EL IMPLEMENTO:**

- **MANTENGA** instalados los protectores, las cubiertas integrales de las líneas de conducción y las cubiertas de entrada
- **NO OPERE** la cortadora si los protectores o cubiertas no están bien colocados o faltan.
- **REEMPLACE O REPÁRELOS** si faltan, están dañados o rotos
- **SIEMPRE REEMPLACE LOS PROTECTORES** que se han quitado para tareas de reparación o mantenimiento.

**PARA EVITAR** que la línea de conducción se rompa durante las operaciones:

- **VERIFIQUE** que la línea de conducción tenga el largo adecuado entre el eje de **PTO** y el eje de la caja de cambios del implemento.
- Las líneas de conducción demasiado cortas se pueden soltar o romper.
- Las líneas de conducción demasiado largas pueden tocar el suelo.
  Un ensamblaje telescópico de la línea de conducción que toque el suelo no se deslizará y se solidificará.
- Si la línea de conducción toca el suelo, puede atravesar los cojinetes de soporte y romper el eje de **PTO**.
- **EVITE** hacer curvas pronunciadas o elevar la cortadora a alturas que puedan hacer caer la línea de conducción.
- Lubrique los componentes telescópicos del eje de transmisión en forma semanal.

**COMUNÍQUESE CON EL DISTRIBUIDOR** si la línea de conducción del implemento no coincide con el eje de **PTO** del tractor:

- **NO UTILICE UN ADAPTADOR DE PTO.**
  El uso de un adaptador de **PTO** puede causar vibración excesiva, caída de objetos, fallas de las cuchillas y el implemento como consecuencia de la duplicación de la velocidad operativa. El aumento de la longitud de trabajo puede exponer áreas desprotegidas de la línea de conducción. ***PN PE01 SP***



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## RIESGO DE ATROPELLO

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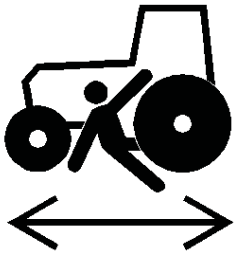
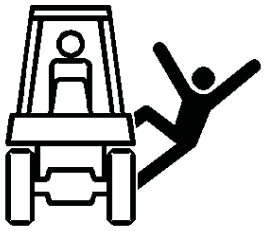
|  |  | |
| Riesgo de atropello del operador | Riesgo de atropello por caída del operador | Riesgo de atropello por caída del operador |

**⚠ PELIGRO** **PARA EVITAR LESIONES GRAVES O LA MUERTE POR CAÍDA DEL TRACTOR O ATROPELLO DEL EQUIPO:**

- USE tractores equipados con SISTEMA ANTIVUELCO (ROPS) y CINTURONES DE SEGURIDAD para las operaciones de corte.
- MANTENGA EL SISTEMA ROPS trabado en posición vertical.
- SÓLO ENCIENDA el tractor sentado en el asiento del tractor.
- SIEMPRE ABRÓCHESE el cinturón de seguridad al operar el tractor y los equipos.
- SÓLO OPERE el tractor y el equipo sentado en el asiento del tractor.
- NUNCA LLEVE A OTRAS PERSONAS en el tractor o implemento.

**AL SUBIR Y BAJAR DEL TRACTOR:**

- • SÓLO suba o baje del tractor cuando éste y sus partes móviles estén detenidos.
- • APAGUE EL MOTOR Y LA TDF, coloque el freno de mano, descienda del implemento, espere a que se detengan todas las partes móviles y quite la llave antes de bajarse del tractor. ***PN RO01 SP***



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## RIESGO DE OBJECTOS LANZADOS Continuado

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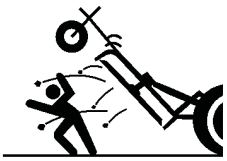
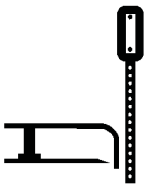
| |  | |  |
| Peligro de objetos lanzados por la cortadora | Objetos lanzados desde cortadora elevada | Inspeccione el área. Quite los objetos extraños | No permita que las cuchillas entren en contacto con objetos sólidos |

**OPERACIÓN DE LA CORTADORA:**

- **NO** exceda la capacidad de corte nominal de la cortadora, ni corte elementos que no sean vegetación.
- **USE CABINAS DE TRACTOR CERRADAS** cuando haya dos o más cortadoras operando en un mismo sector..
- **AJUSTE** las secciones de la cortadora o la ala cercana y paralela al suelo sin exponer las cuchillas
- **AJUSTE LA ALTURA** de corte para **EVITAR EL CONTACTO DE LAS CUCHILLAS** con objetos sólidos, como alambres, piedras, postes, cordones, guardarrailes y obstrucciones fijas.
- **NO** opere la cortadora con la(s) ala(s) elevada(s) o en posición de transporte.
- **DETENGA LA CORTADORA** de inmediato si las cuchillas entran en contacto con objetos pesados, estructuras fijas, guardarrailes de metal y estructuras de cemento:
  1. **LAS CUCHILLAS PUEDEN FALLAR** con el impacto y los objetos pueden ser arrojados a gran velocidad.
  2. **INSPECCIONE** y **REEMPLACE** las cuchillas dañadas.
  3. **VERIFIQUE** el equilibrio del porta cuchillas y **REEMPLÁCELO** si está dañado.
- **NO** opere la cortadora en agua **PARA EVITAR** una posible **FALLA DE LAS CUCHILLAS**.
- **EVITE OPERAR LA CORTADORA** en reversa:
  1. **DETENGA EL PTO** y retroceda la cortadora.
  2. **DESCIENDA** la cortadora, encienda el **PTO** y corte hacia adelante.
- **DETENGA EL PTO** y las **CUCHILLAS** al elevar el implemento o la cortadora a posición de transporte.
- **NO ENCIENDA EL PTO** con la cortadora en posición de transporte.
- **DETENGA** la cortadora cuando se produzca **VIBRACIÓN EXCESIVA:**
  1. **DETENGA EL PTO Y EL MOTOR** del tractor.
  2. **INSPECCIONE** la cortadora para detectar la fuente de la vibración
  3. **REEMPLACE** toda parte dañada o las **CUCHILLAS dobladas o dañadas**. ***PN TO02-X SP***



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# SAFETY

## RIESGO DE OBJECTOS LANZADOS

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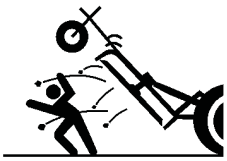
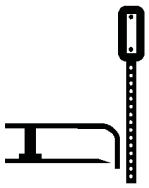
| |  | |  |
| Peligro de objetos lanzados por la cortadora | Objetos lanzados desde cortadora elevada | Inspeccione el área. Quite los objetos extraños | No permita que las cuchillas entren en contacto con objetos sólidos |

**⚠ PELIGRO** **LAS CORTADORAS GIRATORIAS PUEDEN ARROJAR OBJETOS A 90 METROS (300 PIES) O MÁS EN CONDICIONES ADVERSAS.**

**PARA EVITAR LESIONES GRAVES O LA MUERTE AL OPERADOR O TRANSEÚNTES COMO CONSECUENCIA DE OBJETOS ARROJADOS:**

- **MANTENGA** a los transeúntes a 100 metros de distancia (300 pies)

**NO OPERE LA CORTADORA SI HAY PERSONAS A MENOS DE 100 METROS(300 PIES), SALVO QUE:**

- Todos los **PROTECTORES CONTRA OBJETOS ARROJADOS** estén colocados y en buen funcionamiento al operar la cortadora, entre los que se incluyen los deflectores frontales y traseros, los protectores de cadena, los protectores de acero, las bandas, los faldones laterales y las zapatas antideslizantes.
- Las partes de la cortadora o la ala estén ajustadas cerca y paralelas al suelo, sin exponer las cuchillas.
- Se ha inspeccionado el **ÁREA DE CORTE** y se han quitado todos los materiales extraños y residuos.
- **LOS TRANSEÚNTES** estén en el interior de un vehículo cerrado.

**ANTES DE OPERAR LA CORTADORA, INSPECCIONE EL ÁREA PARA DETECTAR LA POSIBILIDAD DE OBJETOSQUE PUEDAN SER LANZADOS:**

- **QUITE** residuos, piedras, cables, alambres, objetos metálicos y cualquier otro objetos extraños del área.
  Los alambres, cables, sogas, cadenas y objetos metálicos pueden ser arrojados o salir desprendidos de la plataforma a gran velocidad:
  1. **MARQUE** los objetos que no se puedan quitar.
  2. **EVITE** estos objetos cuando use la cortadora.

**INSPECCIÓN DEL ÁREA PARA DETECTAR HIERBA ALTA Y MALEZAS:**

- **INSPECCIONE Y QUITE** cualquier residuo oculto de gran tamaño.
- **PASE LA CORTADORA** a una altura intermedia
- **INSPECCIONE** y quite el residuo restante
- **PASE LA CORTADORA** a la altura final

**PROTECCIÓN CONTRA OBJETOS ARROJADOS DE LA CORTADORA:**

- **MANTENGA** todos los protectores contra objetos arrojados en su lugar y en buen funcionamiento al operar la cortadora, entre los que se incluyen los deflectores frontales y traseros, los protectores de cadena, los protectores de acero, las bandas, los faldones laterales y las zapatas antideslizantes.
- **NO OPERE LA CORTADORA** si falta algún protector contra objetos arrojados, o si éstos están dañados.

**DERECHO DE PASO (autopista) CON LA CORTADORA**

- **UTILICE PROTECTORES DE CADENA DOBLES** para autopistas, derecho de paso, parques o cortes en cinturón verde donde pueda haber viviendas, vehículos o ganado dentro de los 100 metros (300 pies) de la cortadora.
- Ninguna protección ofrece una eficacia del 100% en la prevención de objetos arrojados. Para reducir la posibilidad de que se produzcan lesiones:
  1. **MANTENGA LOS PROTECTORES DE LA CORTADORA**, los faldones laterales, la zapatas antideslizantes y las cuchillas en buen estado de funcionamiento,
  2. **ELEVE LA ALTURA DE CORTE a 15 CM (6 PULGADAS)** como mínimo,
  3. **INSPECCIONE EL ÁREA** con cuidado antes de pasar la cortadora para ELIMINAR el pos ble riesgo de **OBJETOS ARROJADOS,**
  4. **NUNCA PERMITA QUE LAS CUCHILLAS EN MOVIMIENTO ENTREN EN CONTACTO CON OBJETOS SÓLIDOS** como alambres, piedras, postes, cordones, guardarrailes o el suelo. ***PN TO02 SP***



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## RIESGO DE APLASTAMIENTO

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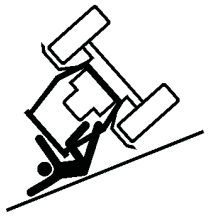
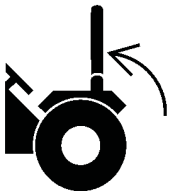
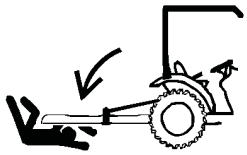
|  |  | |  |
| Lesión aplastante por vuelco | Trabe el sistema ROPS (antivuelco) en la posición vertical | Siempre utilice cinturón de seguridad | Lesión aplastante por caída de implemento |

**⚠ PELIGRO** **PARA EVITAR UNA LESIÓN GRAVE O LA MUERTE POR CAÍDA DEL TRACTOR, O EL APLASTAMIENTO, VUELCO Y APLASTAMIENTO DE UN EQUIPO POR LA CAÍDA DE UNA ALA O UN IMPLEMENTO:**

- **USE tractores equipados con SISTEMA ANTIVUELCO (ROPS) y CINTURONES DE SEGURIDAD para las operaciones de corte.**
- **MANTENGA EL SISTEMA ROPS trabado en posición vertical.**
- **SIEMPRE ABRÓCHESE el cinturón de seguridad al operar el tractor y los equipos.**
- **SÓLO OPERE el tractor y el equipo sentado en el asiento del tractor.**

**AL ELEVAR O DESCENDER EL IMPLEMENTO:**

- **Eleve o descienda SÓLO CUANDO ESTÉ SENTADO en el asiento del tractor, con el cinturón de seguridad ajustado.**
- **Eleve o descienda SÓLO cuando la lengüeta del implemento esté firmemente ajustada a la barra de tracción del tractor PARA EVITAR el vuelco del implemento.**
- **MANTENGA A LOS TRANSEÚNTES FUERA del área de operación PARA EVITAR accidentes por aplastamiento.**

**Los equipos ELEVADOS se pueden caer por fallas mecánicas o hidráulicas o por un movimiento inesperado de la palanca de control.**

**⚠ ADVERTENCIA** **PARA EVITAR LA CAÍDA DEL EQUIPO al trabajar cerca o debajo de los componentes o implementos elevados por un enganche de tractor de 3 puntos:**

- **SUJETE CON FIRMEZA o bloquee en posición vertical todos los equipos, alas y componentes elevados.**
- **BLOQUEE EN POSICIÓN VERTICAL y sujete con firmeza el equipo antes de poner las manos, los pies o el cuerpo debajo de los equipos o componentes elevados.**

**AL ESTACIONAR el implemento y el tractor:**

- **DESCIENDA** el implemento, **TRABE** o **BLOQUEE** las partes elevadas antes de alejarse del equipo.
- **NUNCA** deje un implemento sin atención en posición elevada.

**⚠ ADVERTENCIA** **PARA EVITAR LA CAÍDA O EL APLASTAMIENTO DE NIÑOS POR EL EQUIPO:**

- **NUNCA DEJE** que los niños jueguen sobre el tractor o los implementos, ni en sus alrededores.

**WHEN UNHITCHING IMPLEMENT:**

**AL DESENGANCHAR EL IMPLEMENTO:**

- **DESCIENDA** el implemento, **TRABE** o **BLOQUEE** las partes elevadas antes de alejarse del equipo.
- **USE** el gato de la lengüeta para controlar el movimiento de la lengüeta del implemento
- **USE** el **GATO** de le lengüeta para elevar lengüetas de implementos pesados.
- **EVITE** recargar el gato para evitar falla al gato y una lesión al operador. ***PN CH02 SP***



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# SAFETY

## SEGURIDAD DE CONECTAR O DESCONECTAR IMPLEMENTO

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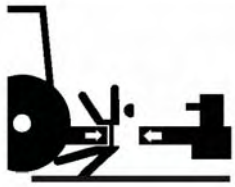
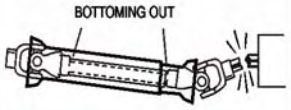
| |  | |  |
| Detenga el tractor<br>Quite la llave<br>Lea el Manual | Lesión opresiva entre tractor e implemento | Asegúrese de que el eje de TDF esté firmemente ajustado al tractor | Asegúrese de que el eje de TDF sea del largo adecuado |

**⚠ PELIGRO** **PARA EVITAR LESIONES GRAVES O LA MUERTE POR APLASTAMIENTO POR EL TRACTOR O IMPLEMENTO:**

- **AL DAR MARCHA ATRÁS** el tractor hacia el enganche del implemento:
- **NO PERMITA QUE HAYA PERSONAS** entre el tractor y el implemento

**ANTES de conectar y desconectar el enganche del implemento:**

- **APAGUE EL MOTOR DEL TRACTOR**, coloque la palanca en “estacionar", ponga el freno de mano y saque la llave.

**Al conectar y desconectar el enganche del implemento:**

- **NO** se agache o camine debajo de la cortadora o la ala en posición elevada.
- **USE** el **GATO** con lengüeta para elevar lengüetas de implementos pesados a fin de controlar el movimiento de la lengüeta del implemento.
- **EVITE** recargar el gato para evitar una falla de éste y una lesión al operador.

**AL CONECTAR LA LÍNEA DE CONDUCCIÓN DEL IMPLEMENTO:**

**PARA EVITAR que la línea de conducción del implemento se suelte durante la operación:**

- **LUBRIQUE** el anillo de cierre del resorte del yugo para asegurarse de que se deslice libremente sobre el eje de **PTO**
- **ASEGURE** las bolas de cierre del yugo en la muesca del eje de **PTO.**
- **PRESIONE y JALE DE LA LÍNEA DE CONDUCCIÓN del EJE DE TOMA DE FUERZA(PTO)** del tractor y del implemento para asegurarse de que estén **FIRMEMENTE SUJETADOS**

**PARA EVITAR que la línea de conducción se rompa durante las operaciones:**

- **VERIFIQUE** que la línea de conducción tenga el largo adecuado entre el eje de **PTO** y el eje de la caja de cambios del implemento.
- Las líneas de conducción demasiado cortas se pueden soltar o romper.
- Las líneas de conducción demasiado largas pueden tocar el suelo.
- Un ensamblaje telescópico de la línea de conducción que toque el suelo no se deslizará y se solidificará.
- Si la línea de conducción toca el suelo, puede atravesar los cojinetes de soporte y romper el eje de **PTO**.

**COMUNÍQUESE CON EL DISTRIBUIDOR si la línea de conducción del implemento no coincide con el eje de TDF del tractor:**

- **NO UTILICE UN ADAPTADOR DE PTO**.
- El uso de un adaptador de **PTO** puede ocasionar:
- Vibración excesiva, caída de objetos, fallas de la hoja y el implemento como consecuencia de la duplicación de la velocidad operativa.
- Mayor extensión de trabajo, lo que deja expuestas áreas desprotegidas de la línea de conducción e implica el riesgo de enredo con otros objetos.

**NO conecte la cortadora a un tractor con la TDF directamente conectada a la transmisión del tractor.** ***PN CD02 SP***



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## SEGURIDAD DEL OPERADOR

| | | | | |
|---|---|---|---|---|
| | | | | |
| Lea con atención el Manual del Operador | Siempre use gafas de seguridad | Use casco y calzado protector | Nunca consuma drogas o alcohol mientras opera el equipo | Utilice chaleco de seguridad al operar en o cercas de carreteras |



**ADVERTENCIA** **PARA EVITAR LESIONES GRAVES O LA MUERTE, SIGA LAS SIGUIENTES INSTRUCCIONES:**

- **LEA, COMPRENDA** y **SIGA** las instrucciones del Manual del Operador, al igual que las Advertencias y Mensajes de Seguridad.
- **USE GAFAS DE SEGURIDAD**, calzado protector, casco, protección auditiva y guantes al operar o reparar el equipo
- **USE** un aparato de respiración apropiado al operar en condiciones polvorientas a fin de evitar contraer enfermedades respiratorias.
- **NO USE** prendas sueltas o joyas que se puedan enredar con las partes giratorias y causar una lesión.
- **NO CONSUMA DROGAS** o **ALCOHOL** antes o durante la operación del equipo.
- **NO PERMITA** que nadie opere el equipo bajo los efectos negativos de las drogas o el alcohol.
- **CONSULTE** a un médico para conocer los efectos desfavorables de la medicación sobre los sentidos.
- **MANTÉNGASE ALERTA**, la operación prolongada puede causar fatiga. **HAGA UNA PAUSA** y **DESCANSE**.

## SEGURIDAD DE OPERACIÓN GENERAL

**CONDICIONES DE VISIBILIDAD AL USAR LA CORTADORA:**

- **OPERE LA CORTADORA CON LUZ SOLAR** o con luz que aporte una visibilidad nítida de más de 90 metros (100 yardas).
- **DEBE PODER VISUALIZAR** e identificar transeúntes, terrenos empinados, pozos, desniveles, obstrucciones elevadas, cables de alimentación, residuos y objetos extraños.

**VELOCIDAD RESPECTO AL SUELO AL USAR LA CORTADORA:**

- El rango de **VELOCIDAD NORMAL** es de entre 2 y 5 millas por hora.
- **AJUSTE LA VELOCIDAD DE CORTE** según las condiciones del terreno y el tipo de césped, la densidad y la altura del corte.
- **REDUZCA LA VELOCIDAD DE CORTE** al acercarse a inclinaciones empinadas, pozos, desniveles, obstrucciones elevadas, cables de alimentación y para evitar residuos y objetos extraños.

**INFESTACIÓN CON INSECTOS**

- No opere en áreas susceptibles al ataque de abejas o insectos, salvo que **USE PRENDAS PROTECTORAS** o una cabina de tractor cerrada.

**VELOCIDAD DE PTO:**

- **NO EXCEDA LA VELOCIDAD DE PTO NOMINAL DEL IMPLEMENTO**
- **EVITE** superar las velocidades nominales de PTO, porque puede causar roturas en la línea de conducción o fallas de las cuchillas.

**SEÑALES DE SEGURIDAD:**

- **REEMPLACE** cualquier señal de seguridad faltante, dañada o ilegible. ***PN OS01 SP***



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# SAFETY

## INSTRUCCIONES DE SEGURIDAD Y PRÁCTICAS GENERALES

El mejor operador es un operador cuidadoso. La seguridad es de importancia fundamental para el fabricante, y también debería serlo para el propietario u operador. La mayoría de los accidentes se pueden evitar prestando suma atención al equipo, al ambiente circundante, y tomando algunas precauciones. La primera sección de este manual incluye una lista de Mensajes de Seguridad que deben observarse para contribuir a la protección del operador y otras personas frente a lesiones o la muerte. Lea con atención estos Mensajes de Seguridad antes de ensamblar, operar o reparar este Implemento. Este equipo sólo debe ser operado por personas que hayan leído el manual, responsables y calificadas, que sepan cómo hacerlo de manera responsable.

El Símbolo de Alerta de Seguridad se utiliza en combinación con una Señal Verbal, tal como la que se muestra a continuación, en todo este manual y en los autoadhesivos adheridos a los equipos. El Símbolo de Alerta de Seguridad significa:

**"¡ATENCIÓN! ¡MANTÉNGASE ALERTA! ¡SU SEGURIDAD ESTÁ EN JUEGO!"** El Símbolo y la Señal Verbal tienen el objetivo de advertir al propietario/operador sobre un riesgo inminente y el grado de lesión que se puede producir al operar este equipo.

**Adopte todas las medidas habituales para trabajar en forma segura y, sobre todo, recuerde que la seguridad depende de USTED. Sólo USTED puede impedir una lesión grave o la muerte a causa de prácticas no seguras.**

**⚠ PELIGRO** Indica una situación peligrosa inminente que, de no ser evitada, **OCASIONARÁ** la **MUERTE O UNA LESIÓN MUY GRAVE**.

**⚠ ADVERTENCIA** Indica una situación peligrosa inminente que, de no ser evitada, **PODRÍA OCASIONAR** la **MUERTE O UNA LESIÓN MUY GRAVE**.

**⚠ PRECAUCIÓN** Indica una situación peligrosa inminente que, de no ser evitada, **PODRÍA OCASIONAR UNA LESIÓN MENOR**.

**Importante** Identifica instrucciones o procedimientos específicos que, de no observarse estrictamente, podrían ocasionar daños o la destrucción de la maquinaria, los accesorios o el entorno.

***NOTA:*** *Identifica aspectos de particular interés para lograr una operación o reparación más eficiente y conveniente.*

**LEA CON ATENCIÓN Y RESPETE** los siguientes Mensajes de Seguridad. Si no se siguen cuidadosamente las advertencias e instrucciones indicadas en este Manual y en los Mensajes de Seguridad del implemento, se pueden producir lesiones graves o la muerte. Siempre siga las instrucciones de este manual y use el sentido común para evitar situaciones peligrosas.

**NOTA:** *Si desea obtener una traducción de esta sección de seguridad en alguno de los siguientes idiomas, comuníquese con: Translations, a la dirección 1502 E. Walnut Street Seguin, TX 78155; Fax: (830) 372-9529; La Sección de Seguridad está disponible en español, portugués, francés, alemán, ruso.* ***PN GS01 SP***



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# SECCIÓN DE SEGURIDAD



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# Instrucciones de operaciones antes de la entrega del DISTRIBUIDOR al CLIENTE

El distribuidor deberá informar al comprador de este producto las condiciones, disposiciones y procedimientos de garantía aplicables; informar la responsabilidad del comprador de capacitar a sus operadores para la operación segura; revisar el contenido del Manual del Operador, incluido el equipo de seguridad, la operación segura y el mantenimiento; y revisar las Señales de Seguridad que se encuentran en el implemento (y en el tractor, de ser posible).

- IMPLEMENTOS: He explicado que los deflectores, protectores de cadena o faldones sólidos se deben mantener en buenas condiciones de reparación y se deben instalar, excepto en zonas donde personas, vehículos, ganado u otros bienes no corran peligro por objetos arrojados, y en los casos en que dichos equipos de seguridad impedirían un desempeño razonable de la cortadora en su tarea asignada.

- LÍNEAS DE CONDUCCIÓN: Me he asegurado de que todos los protectores de líneas de conducción, de caja de engranajes y otros están en buenas condiciones de reparación y firmemente sujetados para prevenir lesiones por enredo u objetos arrojados.

- MÁQUINAS HIDRÁULICAS: He explicado la necesidad de usar aceite hidráulico limpio, cambiar los filtros según las instrucciones, detener filtraciones, prevenir daños por operar con aceite demasiado caliente, cuidar las mangueras, usar mangueras del tipo correcto, mantener la presión operativa especificada y prevenir el posible riesgo de que el aceite penetre en la piel.

- IMPLEMENTOS PLEGABLES: He explicado que no es posible proteger contra objetos arrojados cuando el cabezal está elevado del suelo y que el operador es responsable de verificar que no existan personas en las inmediaciones. He explicado que el brazo o cabezal de cortadora elevado puede entrar en contacto con obstrucciones elevados y dañar cables y líneas telefónicas, y posiblemente causar lesiones. He explicado que el brazo o cabezal extendido, o el brazo retraído, puede entrar en contacto con cables de alimentación y causar lesiones o la muerte por electrocución, y que el operador es responsable de evitar dichos riesgos.

## SERVICIO ANTES DE LA ENTREGA
## VERIFIQUE Y AJUSTE O LUBRIQUE SEGÚN SEA NECESARIO

**Consulte los detalles en el Manual del Operador**

**Inspección realizada – Garantía y procedimientos de seguridad explicados – Instalación realizada**

**LUBRICACIÓN E HIDRÁULICA**

- ☐ Caja de engranajes (niveles de aceite)
- ☐ Nivel de aceite hidráulico (tanque externo)
- ☐ Nivel de aceite hidráulico del tractor
- ☐ Mangueras hidráulicas (no retorcidas y ajustadas)
- ☐ Propulsor de bomba frontal (conjunto ajustado y eje bien alineado)

**CORTADORA**

- ☐ Pernos de husillo y motor bien ajustados
- ☐ Nivel de aceite del husillo
- ☐ Pernos de porta cuchillas bien ajustados/pasadores de retención colocados
- ☐ Nivel y altura de corte de la cortadora ajustados
- ☐ Cojinetes del eje de corte lubricados
- ☐ Todas las piezas metálicas bien ajustadas
- ☐ Presión de aire y neumáticos/tuercas de rueda (bien ajustadas)
- ☐ Cojinetes de rueda (verificar, engrasar y hacer carga previa)

**ACCESORIOS E INSTALACIÓN**

- ☐ Deflectores frontales y traseros
- ☐ Accesorios de trituración
- ☐ Sentido de giro de las hojas correcto
- ☐ Vigas y brazos de eje
- ☐ Lengüeta y barras de control (instaladas y ajustadas)
- ☐ Todos los pernos, pasadores y tuercas (ajuste correcto)

**CONEXIONES DE CORTADORA A TRACTOR**

- ☐ Longitud de barra de enganche (verificar y fijar)
- ☐ Pivote y conexiones de bastidor en A
- ☐ Barras de control (ajustadas iguales)
- ☐ Altura de eje (ajustar)
- ☐ Altura de corte (ajustar)
- ☐ Verificación de pre-operación de kit de montaje
- ☐ Aleta de cortadora (ajustar nivel con el centro)
- ☐ Aleta de cortadora (verificar operación de elevación correcta)
- ☐ Líneas de conducción C.V. (verificar radio de giro máx.)
- ☐ Enganche de tracción (ajuste de altura)
- ☐ Piezas metálicas de montaje bien ajustadas

**ELEMENTOS DE SEGURIDAD**

- ☐ Protectores (operación e instalación)
- ☐ Embrague de línea de conducción (limitador de ajuste) (ajustar y poner en marcha)
- ☐ Autoadhesivos de seguridad (colocados)
- ☐ Manual del Operador (entregado)
- ☐ Protector de TDF del tractor (instalado)
- ☐ Emblema S.M.V. (instalado de ser necesario)
- ☐ Gato con lengüeta (instalación y operación)
- ☐ Cadena de remolque de seguridad (instalada)
- ☐ Manual de Seguridad de Línea de Conducción ADMA (entregado)
- ☐ Manual de Seguridad de Cortadora AEM (entregado en porta manual)
- ☐ Se mostró el Video de Seguridad de Cortadora AEM al comprador

# Bush Hog está dispuesto a suministrar un (1) Video de Prácticas de Seguridad para Cortadoras AEM

Por favor enviar: ☐ Video de Seguridad para el Operador de Cortadoras AEM/FEMA – formato VHS

☐ Video de Seguridad para el Operador de Cortadoras AEM/FEMA – formato DVD

☐ Manual del Operador de la Cortadora

☐ Manual de Seguridad del Operador de la Cortadora AEM

Nombre del solicitante:_____Teléfono:_____

Dirección del solicitante:_____

Ciudad:_____

Estado:_____

Código postal:_____

Modelo de cortadora:_____Número de serie:_____

Fecha de compra:_____ Vendedor del distribuidor:_____

Nombre del distribuidor:_____Dirección del distribuidor:_____

Enviar por correo a:

AEM Video Services

1502 E. Walnut Street

Seguin, TX 78155

O enviar por fax a:

(830) 372-9529

O enviar por correo electrónico a:

AEMVideo@alamo-group.com

A fin de reducir la tasa de accidentes y mejorar la operación segura de las cortadoras, Alamo Group Ag Division se ha asociado con otros fabricantes de la industria para desarrollar el video y la guía de Prácticas de Seguridad para Cortadoras Industriales y Agrícolas AEM/FEMA.

El video explica a los operadores de tractores y cortadoras las prácticas seguras que deben adoptar cuando utilizan cortadoras industriales y agrícolas. Es importante que todos los operadores de cortadoras aprendan cómo operar sus equipos de corte y puedan reconocer los posibles peligros que pueden surgir al operar una cortadora. Este video, en conjunto con el manual del operador de la cortadora y los mensajes de advertencia que se encuentran en la cortadora, serán muy útiles para complementar este aprendizaje tan importante.

Es posible que su distribuidor autorizado de Bush Hog le haya mostrado este video y le haya entregado una copia en DVD cuando adquirió su cortadora. Si usted o algún operador de cortadora no vio el video: mire el video, lea este Manual del Operador, y complete la Guía del Video antes de operar su cortadora nueva. Si no comprende alguna de las instrucciones del video o del manual del operador, o si tiene alguna pregunta acerca de la operación segura, comuníquese con su supervisor, con el distribuidor o con Alamo Group Ag.

Si desea recibir una copia del video en VHS, envíe un mensaje de correo electrónico a AEMVideo@alamo-group.com o un fax al (830) 372-9529, o envíe por correo una copia rellenada del formulario que se encuentra al dorso de esta página a AEM VHS Video 1502 E Walnut Street, Seguin, TX 78155, y solicite la versión en VHS. Indique su nombre, dirección postal, modelo de cortadora y número de serie.

Cada uno de los operadores debe recibir capacitación para cada equipo (tractor y cortadora), comprender el uso previsto, y comprender los posibles peligros antes de operar el equipo.

La informacion y material mecionado en la informacion anterior junto con el Manual de Operador puede asistir en cumplir con los requisitos de OSHA para el entrenamiento anual del Operador.

**REQUISITOS DE ENTRENAMIENTO DEL OSHA**

**Los seguientes requisitos de entrenamiento se an tomoda del Titulo 29, código de la pieza de regulaciones federales 1928.57 (a) (6). www.osha.gov**

Instrucciones del operador. A la hora de la asignación inicial y por lo menos anualmente después de eso, el empleador mandará a cada empleado quien opera un tractor agricola o implemento en las practicas de operación segura y el mantenimiento de el equipo con el cual el empleado esté, o estará implicado y de cualquier otras prácticas dictados por el ambiente laboral.

# Al propietario/operador/distribuidor

Este Manual del Operador es una parte esencial de la operación segura de esta máquina y se debe mantener con la unidad siempre. El implemento incluye un porta manual donde se puede guardar el manual de manera adecuada. Si el manual se extravía o se daña, puede solicitar otra copia sin cargo a un distribuidor autorizado de Bush Hog o descargarlo del sitio web de Bush Hog (www.bushhog.com).

ANTES DE COMENZAR LEA, COMPRENDA y SIGA la información incluida en este manual, el Manual de Seguridad de la Cortadora AEM y el manual del operador del tractor para conocer cómo operar la máquina y realizar tareas de servicio correctamente. De lo contrario, podría sufrir lesiones u ocasionar lesiones a terceros. Todos los implementos con partes móviles son potencialmente peligrosos. Cada esfuerzo ha sido hecho para asegurar que la màquina esté segura, pero los operadores deben evitar entrar en prácticas peligrosas y seguir las instrucciones escritas que son proporcionadas. El fabricante ha diseñado este implemento para ser usado con todos sus equipos de seguridad correctamente sujetados para minimizar la probabilidad de accidentes.

LA SEGURIDAD PRIMERO. Lea con atención la totalidad de la sección de seguridad de este manual antes de operar el equipo. No permita que nadie opere el equipo sin haber leído y comprendido la totalidad de este manual. Comuníquese con el distribuidor si necesita explicación sobre alguna instrucción que no haya comprendido del todo.

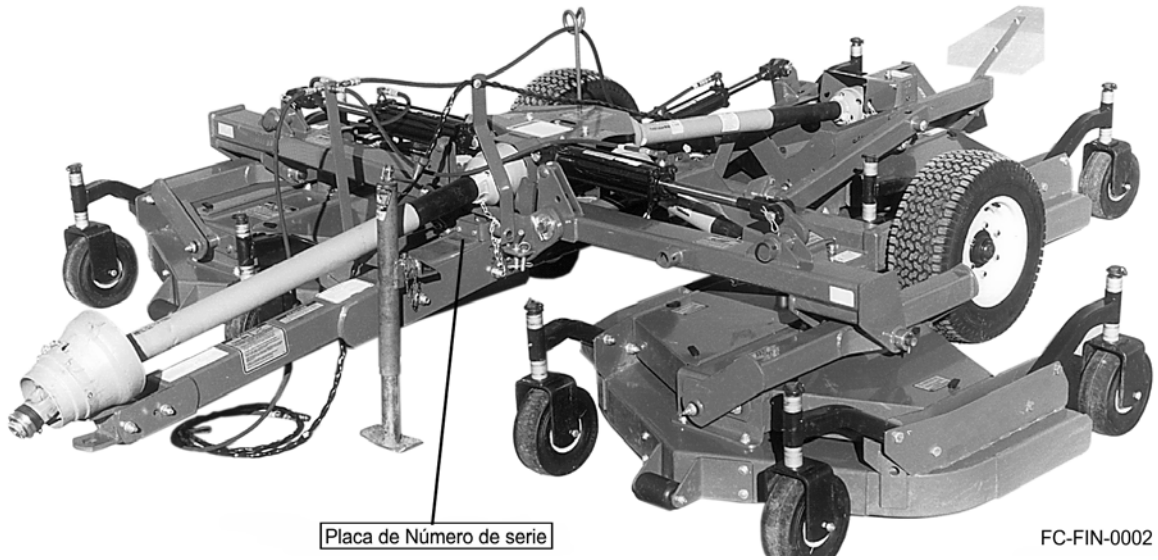
Los cuidados que brinde a su Implemento Bush Hog determinarán en gran medida su satisfacción con el desempeño y la vida útil del equipo. Lea con atención y siga las instrucciones de este manual para comprender cabalmente su nuevo implemento, su uso previsto, y sus requisitos de servicio.

Todas las referencias que se hacen en este manual a derecha, izquierda, frontal, trasero, arriba y abajo corresponden a la perspectiva en el sentido del desplazamiento hacia delante con el implemento correctamente sujetado al tractor.

La información sobre repuestos se encuentra por separado en el Manual de Partes. Las cortadoras Bush Hog utilizan componentes del sistema equilibrados y coincidentes para porta cuchillas, cuchillas, ejes de corte, hojas, ganchos para hojas, rodillos, componentes de los engranajes, y cojinetes. Estas partes se fabrican y se prueban según las especificaciones de Bush Hog. Las partes compatibles no genuinas no siempre cumplen con estas especificaciones. El uso de partes no genuinas puede perjudicar el desempeño de la cortadora, anular la garantía y presentar un riesgo para la seguridad. Use partes genuinas Bush Hog para ahorrar dinero y maximizar la seguridad.

Para referencia futura, registre el número de modelo y el número de serie de Bush Hog que ha adquirido.

| | | | | | |
|---|---|---|---|---|---|
| Distribuidor | | Teléfono | | Número de Modelo | |
| Dueño | | Fecha de compra: | | Número de serie | |



# TD1100

BUSH HOG®

## CORTADORA GIRATORIA DE TRIPLE ACOPLAMENTO

Published 10/14

Part No. 50024754

# MANUAL DE OPERADOR

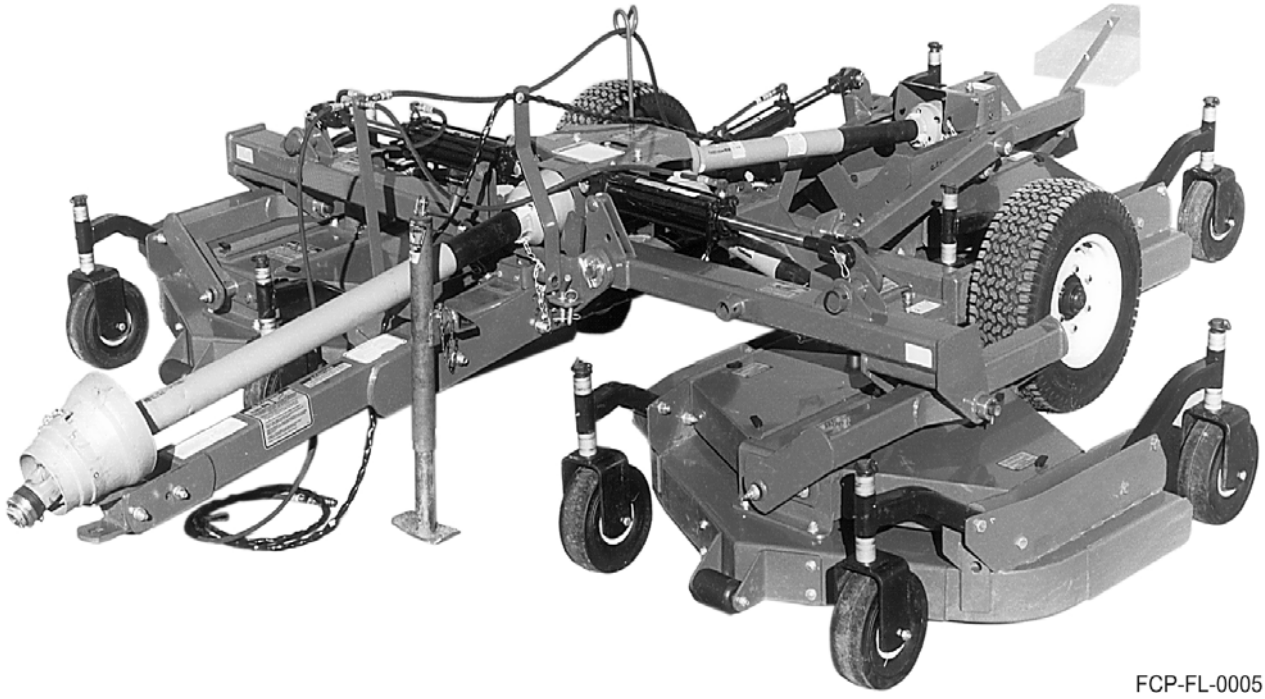
Este Manual del Operador es una parte esencial de la operación segura de esta máquina y se debe mantener con la unidad siempre. LEA, ENTIENDA, y SIGA las Instrucciones de Seguridad y Operación contenidas en este manual antes de operar el equipo. *C01-Cover SP_B*

Importantes instrucciones de operación y las instrucciones de seguridad se encuentran en el video Cortacésped Sobre Seguridad que se puede acceder instantáneamente en el internet en:

www.algqr.com/bvs

Vídeo de Seguridad

www.algqr.com/bvs



FCP-FL-0005

**BUSH HOG®**

2501 Griffin Ave.
Selma, AL 36703
334-874-2700
www.bushhog.com

Página Web de Bush Hog

www.algqr.com/bwe

ATTENTION!
Read Manual
If you do not read spanish please flip manual over for safety information in english.

MEMBER OF THE ALAMO GROUP
ALWAYS ON THE CUTTING EDGE®

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$0.00